

Mathematics

By a group of supervisors

PARENTS' GUIDE

EL-MOASSER Interactive E-learning Application



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4th PRIMARY

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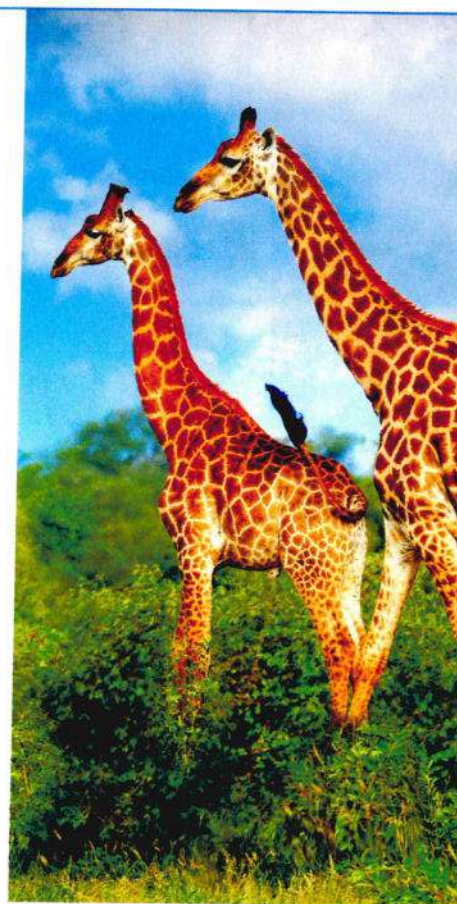
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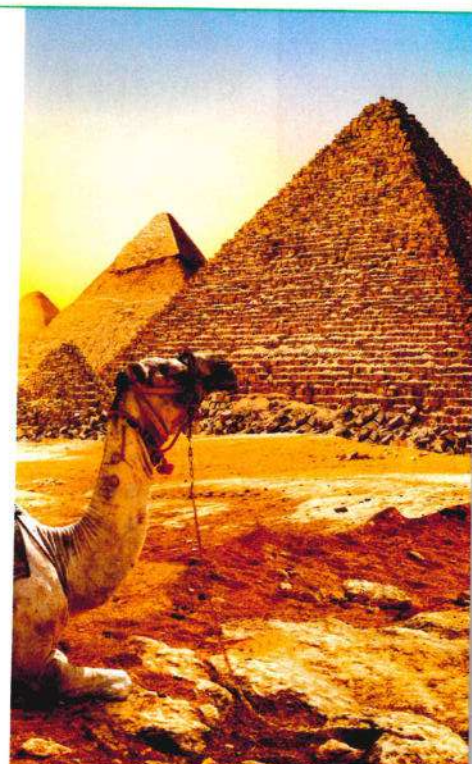
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Order of Operations

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REVISION

In this revision your child will review on what he/she had learned in primary three.

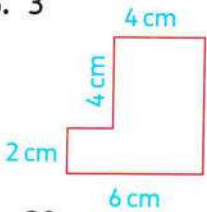


Revision 1

1. Complete.

- $32,621 + 18,709 =$ _____
- 30 thousands = _____ hundreds.
- The perimeter of the rectangle  is _____ cm.
- The place value of the digit 4 in the number 46,385 is _____
- Thirty-eight thousand, five hundred two in standard form is _____

2. Choose the correct answer.

- $35 \div 7 =$ _____
A. 5 B. 6 C. 7 D. 8
- $3,000 + 829 =$ _____
A. 3,829 B. 8,293 C. 30,829 D. 3,928
- $8 \times \text{_____} = [8 \times 5] + [8 \times 2]$
A. 10 B. 3 C. 8 D. 7
- The area of the shape  is _____ square cm.
A. 30 B. 28 C. 24 D. 20
- The greatest number formed from 7, 2, 0, 6, 8, 1 is _____
A. 870,621 B. 876,210 C. 102,678 D. 780,621

3. Arrange the following numbers from least to greatest.

56,210 , 506,021 , 650,201 , 171,000 , 43,692

The order is: _____ , _____ , _____ , _____ , _____

4. Find.

a.
$$\begin{array}{r} 7,263 \\ - 4,081 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 43,826 \\ + 25,095 \\ \hline \end{array}$$

c. $9 \times 3,000 =$ _____

d. $7 \times 7 =$ _____

Revision 2

1. Choose the correct answer.

a. $54,275 - 32,938 =$ _____

A. 12,337

B. 21,373

C. 21,733

D. 21,337

b. $501,326 <$ _____

A. 510,200

B. 501,236

C. 51,623

D. 56,632

c. $3 \times 80 =$ _____

A. 24

B. 240

C. 2,400

D. 24,000

d. $\frac{1}{7}$ of 28 = _____

A. $\frac{1}{8}$ of 32

B. $\frac{1}{5}$ of 30

C. $\frac{1}{6}$ of 48

D. $\frac{1}{9}$ of 18

e. The perimeter of the square  is _____ cm.

A. 20

B. 25

C. 10

D. 30

2. Complete.

a. Eight hundred sixty-three thousands, five hundred seven in standard form is _____

b. The place value of the digit 7 in 762,435 is _____

c. $7 \times$ _____ = 63

d. _____ = $100,000 + 7,000 + 30 + 5$

e. _____ tens = 170



3. A factory produces 800 cans of soft drink every day.

How many cans the factory produces in a week ?

4. Write the greatest number and smallest number can be formed

from 9, 4, 0, 3, 1, 6.

- The greatest number : _____

- The smallest number : _____

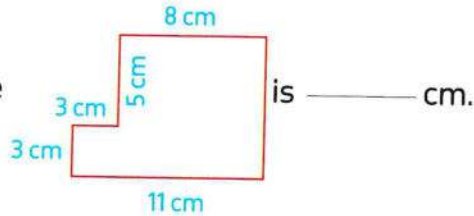
Revision 3

1. Complete.

a. $\text{————} \div 4 = 8$

b. $[5 \times 6] \times 7 = \text{————}$

c. The perimeter of the shape



is ———— cm.

d. $8,762 - 7,648 = \text{————}$

e. The smallest number formed from 2, 7, 0, 6, 5 is ————

2. Choose the correct answer.

a. The value of the digit 3 in 721,362 is ————

A. 30,000

B. 3,000

C. 300

D. 30

b. The area of the rectangle whose length is 10 cm and width is 7 cm is ———— square cm.

A. 17

B. 34

C. 70

D. 44

c. $\text{————} = 1,000 + 900 + 70 + 2$

A. 19,472

B. 1,927

C. 10,972

D. 1,972

d. $61,072 + 9,838 = \text{————}$

A. 7,910

B. 70,910

C. 79,010

D. 70,091

e. $6 + 6 + 6 + 6 + 6 = 6 \times \text{————}$

A. 6

B. 5

C. 7

D. 8

3. Arrange the following from least to greatest.

5×12 , 7×8 , 3×10 , 6×9 , 8×1

The order is : ———— , ———— , ———— , ———— , ————

4. Bassem has 72 marbles, he wants to put each 8 marbles in a bag.

How many bags does Bassem need ?

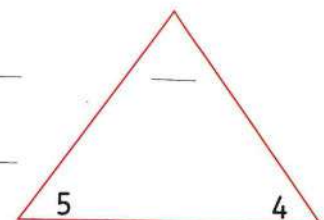
5. Find the product. Write the fact family.

• $\text{————} \times \text{————} = \text{————}$

• $\text{————} \times \text{————} = \text{————}$

• $\text{————} \div \text{————} = \text{————}$

• $\text{————} \div \text{————} = \text{————}$



THEME ONE

Number Sense and Operations

UNIT

1

Place Value

- ▶ **Concept 1 :**
Reinforcing Place Value
- ▶ **Concept 2 :**
Using Place Value



CONCEPT

1

Reinforcing Place Value

► Lessons 1&2

Big Numbers!
Changing Values

Learning Objectives:

- Students will identify all whole number place values through the One Milliard place.
- Students will explain how the value of a digit changes based on its place in a number
- Students will explain how the value of a digit changes as it moves to the left in a whole number.
- Students will describe patterns they observe in changing place values.

► Lessons 3&4

Many Forms to Write Numbers
Composing and Decomposing

Learning Objectives:

- Students will write numbers in standard, word, and expanded forms.
- Students will compose and decompose number in multiple forms.

Fast Fact

- The distance between the Earth and the Sun is about **149,598,000 km.**
- The least distance from the Earth to the Moon is about **384,402 km.** which equals **384,402,000 m.**

Lessons 1 & 2

► Big Numbers! ► Changing Values

Remember The place value

The value of each digit in any number depends on its place in this number.

For Example :

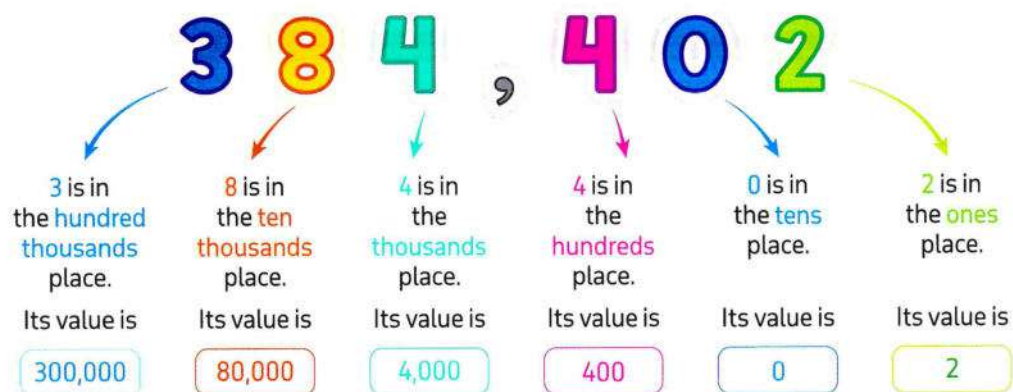
The least distance from the Earth to the moon is 384,402 km.

Notice the value of each digit in the number 384,402.

Note that :

Each group of three digits is called a period. Each period has ones, tens and hundreds in it.

PERIOD			PERIOD		
THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	8	4	4	0	2



Example 1

Write the place value and the value of the colored digit.

	place value	value		place value	value
a. 79,285			a.	thousands	9,000
b. 980,758			b.	tens	50
c. 29,510			c.	ten thousands	20,000
d. 220,089			d.	hundreds	0

Notes for parents :

• Let your child remember that the position of a digit in a number determines its value.

Learn 1 Really big numbers

Million

- You know that the greatest 6-digit number is 999,999.

The number which comes just after 999,999 is **1,000,000**. It is read as **one million** which is the smallest 7-digit number.

- To show **1,000,000** in the place-value chart, a period for **Millions** has to be added to the left of the Thousands period.

PERIOD			PERIOD			PERIOD		
MILLIONS			THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		1	0	0	0	0	0	0

Written as : 1,000,000

Read as : One million

More about millions

Egypt population in 2020 was 102,334,404
look at this number on the place-value chart.



PERIOD			PERIOD			PERIOD		
MILLIONS			THOUSANDS			ONES		
H	T	O	H	T	O	H	T	O
1	0	2	3	3	4	4	0	4
↑ Hundred Millions place	↑ Ten Millions place	↑ Millions place	↑ Hundred Thousands place	↑ Ten Thousands place	↑ Thousands place	↑ Hundreds place	↑ Tens place	↑ Ones place

This number read as :

One hundred two million, three hundred thirty-four thousand,
four hundred four.

or in a short way : 102 million, 334 thousand , 404

Math tip

The place-value chart helps you read greater numbers. You say : "102" then at the comma you name the period, "million".

- Help your child apply and extend understanding of the place value system to multi-digit whole numbers.

Example 2

What is the place value and the value of each underlined digit ?

583,460,905

Solution

Place value : Ten Millions
Value : 80 million
Or : 80,000,000

Place value : Ten Thousands
Value : 60 thousand
Or : 60,000

Place value : Millions
Value : 3 million
Or : 3,000,000

Place value : Tens
Value : 0 ten
Or : 0

583,460,905

Milliard (Billion)

China has the world's largest population. In 1980, the population of China reached about **1,000,000,000**. It is read as **one milliard** (or **one billion**).

To show 1,000,000,000 in the place-value chart, a column for **Milliards** has to be added to the left of the Millions period.



	PERIOD			PERIOD			PERIOD		
MILLIARDS	MILLIONS			THOUSANDS			ONES		
<i>Ones</i>	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
1	0	0	0	0	0	0	0	0	0

Written as : 1,000,000,000

Read as : One milliard

Notes for parents :

- Ask your child to tell you the value and the place value of each digit in the number : 243,019,507.

More about millions

The world's population in 2020 was about 7,794,798,739

Look at this number on the place-value chart.

PERIOD				PERIOD			PERIOD		
MILLIARDS	MILLIONS			THOUSANDS			ONES		
0	H	T	O	H	T	O	H	T	O
7	7	9	4	7	9	8	7	3	9

This number read as :

Seven milliard, seven hundred ninety-four million,
seven hundred ninety-eight thousand,
seven hundred thirty-nine.

or in a short way :

7 milliard, 794 million, 798 thousand, 739



Example 3

In the number 3,418,079,265, what digit is in the :

- Thousands place ?
- Ten Millions place ?
- Milliards place ?
- Hundred Thousands place ?

Solution

- 9
- 1
- 3
- 0

How to read a large number ?

- Divide the number [from right to left] into "**periods**" each period contains 3 digits.

6,208,196,318

- Use the place-value chart to help you read the large number.

PERIOD				PERIOD			PERIOD		
MILLIARDS	MILLIONS			THOUSANDS			ONES		
0	H	T	O	H	T	O	H	T	O
6	2	0	8	1	9	6	3	1	8
6 milliard	208 million			196 thousand			318		

- Help your child use periods to read multi-digit numbers in an easy way.

- 3 Start from the left and read the number in each period followed by the period name as follows.

Reading

6,208,196,318

Six milliard, two hundred eight million,
one hundred ninety-six thousand, three hundred eighteen.

In a short way : 6 milliard, 208 million, 196 thousand, 318

Example 4

Choose the correct answer.

- 4 milliard, 103 million, 905 thousand, 484 = _____
A. 43,509,458 B. 403,590,548 C. 4,103,905,484 D. 4,950,854
- Forty-three million, five hundred nine thousand, four hundred fifty-eight = _____
A. 43,509,458 B. 403,590,548 C. 4,103,905,484 D. 4,950,854
- 403 million, 590 thousand, 548 = _____
A. 43,509,458 B. 403,590,548 C. 4,103,905,484 D. 4,950,854
- The value of the digit 3 in the Hundreds place is _____
A. 3 B. 30 C. 300 D. 3,000

Solution 

1. C 2. A 3. B 4. C

 **Check** your understanding

1. In each of the following numbers.

- underline the digit in the Hundred Thousands place.
- circle the digit in the Ten Millions place.
- draw a square around the digit in the Millions place.

- a. 7,561,492,048 b. 3,914,500,721

2. Read the following numbers.

- a. 912,031,301 b. 70,804,230 c. 5,003,521,216

3. What is the value of each of the following.

- a. 8 in the Tens place ? b. 5 in the Ten Thousands place ?

Notes for parents :

- Ask your child to write a number through milliard and then ask him/her to read it loudly.

Learn 2 Changing place values

- The value of a digit changes as it moves to the left within a number.
- Our place-value system is based on **tens**.

Each place value in this system is **10 times** the one to the right of it.



	$\times 10$	$\times 10$	$\times 10$	$\times 10$	$\times 10$	$\times 10$
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	2	2	2	2	2	2
2,000,000	200,000	20,000	2,000	200	20	2

- A digit in one place equals 10 times the digit in the place to its right.

For Example : The Hundreds place is 10 times the Tens place, so the value of 2 changes from 20 to 200.

- Observe the pattern in the number of zeroes.

Example 5

Fill in the blanks below.

- The value of the digit 3 in the number 7,431,210 equals _____ times the value of the digit 3 in the number 4,563,809
- The value of 7 in the Thousands place = _____ times the value of 7 in the Tens place.
- _____ is 10 times one hundred thousand.
- 30 tens equals _____
- 7,000 thousands = _____ millions.

Solution

- 10
- 100
- 1,000,000
- 300 [**think** : $30 \times 10 = 300$]
- 7 [**think** : 7,000 **thousands** = 7,000,000]

Check your understanding

How does the value of 5 change as it moves from the Hundreds place to the Thousands place?

- Let your child understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

Exercise

1

on lessons 1&2

► Big Numbers! ► Changing Values

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Complete the table as in the example.

		MILLIARDS	MILLIONS			THOUSANDS			ONES		
	Number	O	H	T	O	H	T	O	H	T	O
Ex.	5,604,453,987	5	6	0	4	4	5	3	9	8	7
a.	8,714,326,518	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
b.	753,009,300	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
c.	7,354,621	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
d.	8,000,300	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
e.	923,508	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

2. In the number 1,542,345,678 , What digit is in the

- | | |
|--------------------------------|------------------------------------|
| a. Tens place ? _____ | b. Hundreds place ? _____ |
| c. One Thousands place ? _____ | d. Hundred Thousands place ? _____ |
| e. Ten Millions place ? _____ | f. One Billions place ? _____ |

3. Write the value of the underlined digit according to its place in each number as in the example.

► Example: 47,209,531 → 40,000,000

- | | |
|---------------------------------|-----------------------------------|
| a. 58, <u>4</u> 86,098 → _____ | b. 3, <u>7</u> 84,168,411 → _____ |
| c. <u>6</u> 2,478,300 → _____ | d. 462, <u>4</u> 17 → _____ |
| e. <u>2</u> 4,041,683 → _____ | f. 8,000, <u>4</u> 18,617 → _____ |
| g. 41,6 <u>9</u> 1,403 → _____ | h. <u>3</u> 21,428,218 → _____ |
| i. 669,0 <u>8</u> 4,422 → _____ | j. 7,261, <u>9</u> 09 → _____ |
| k. 30,30 <u>3</u> ,333 → _____ | l. <u>6</u> 1,230,478 → _____ |

[El-Monofia - Shebin El Koum 22]

4. Complete.

- a. The place value of the digit 2 in the number 2, 500, 000 is _____ [Souhag 23]
- b. The place value of the digit 3 in the number 1, 365, 854 is _____
[Giza - Abo El-Nomros 23]
- c. The place value of the digit 3 in the number 23, 174, 265 is _____
[Giza - 6th October 22]
- d. The place value of the digit 9 in the number 91, 300, 122 is _____ [Alex. - Agmy 24]
- e. The place value of the digit 0 in the number 5, 321, 041, 758 is _____
- f. The value of the digit 5 in the number 346, 251, 813 is _____ [Cairo 23]
- g. The value of the digit 6 in the number 26, 715, 324 is _____ [Cairo - Math's Inspection 23]
- h. The value of the digit 6 in 61, 230, 478 is _____ [Kafr El-Sheikh 24]
- i. The value of 2 in the Tens place = _____
- j. The value of 7 in the Hundreds place = _____
- k. The million is the smallest number formed from _____ digits.
- l. The milliard is the smallest number formed from _____ digits.
- m. The smallest number formed from the digits 9, 7, 6, 8, 3, 1 and 4 is _____
- n. The smallest number formed from the digits 4, 2, 6, 0, 7, 5, 1 and 3 is _____
- o. The greatest number formed from the digits 8, 1, 3, 4, 5, 0, 9, 7 and 2 is _____
- p. The greatest number formed from 7 digits is _____

5. Complete.

- a. 75, 421, 392 = _____ million, _____ thousand, _____
- b. 2, 500, 422, 300 = _____ milliard, _____ million, _____ thousand, _____
- c. _____ = 701 million, 7 thousand, 700
- d. _____ = Two million, five hundred thousand, four hundred twenty-two.
- e. _____ = 9 milliard, 9 million, 9 thousand, 9
- f. _____ = 27 million, 27 thousand.
- g. _____ = Sixteen milliard, sixteen.

6. Fill in the blanks as in the example.

- Ex. • 23,800 = 238 hundreds.
• 60 tens = 600

75, 000

- 750 hundreds = 75 thousands.

a. 56,000 = _____ thousands.

b. 280,000 = _____ hundreds.

c. 32,000 = _____ thousands.

[El-Kalyoubia - Math's Inspection 23]

d. 300 thousands = _____ hundreds.

e. 55 thousands = _____ hundreds.

f. 72,000 tens = _____ thousands.

g. 87,900,000 hundreds = _____ millions.

h. 80 tens = _____ [El-Menia 23]

i. 30 tens = _____ [Cairo - El-Shrouk 23]

j. 40 tens = _____ [Cairo 23]

k. 60 thousands = _____

l. The value of 50 thousands = _____

[Alexandria - Montaza 23]

7.  Amir says that in the number 222, all of the digits have the same value.
Do you agree or disagree? Use words and numbers to explain your thinking.

8. Fill in the blanks.

- a. _____ is 10 times one hundred thousand.
b. _____ is 10 times two hundred.
c. _____ is 10 times seven thousand.
d. Hundred thousand is _____ times ten thousand.

 Challenge

9. Use the digits 5, 7, 3, 1, 8, 2, 9 and 6 to make the greatest number you can, then use the same digits to make the smallest number you can.
- The greatest is _____
 - The smallest is _____
 - How did the value of 7 change from the greatest number and the smallest number? Why did it change? Use words and numbers to explain your thinking.



Multiple Choice Questions

Choose the correct answer.

1. The digit in the Ten Thousands place in the number 1,351,278 is _____.
 A. 3 B. 2 C. 5 D. 1
 [Luxor 24]

2. The digit in the Hundred Thousands place in the number 3,910,472 is _____.
 A. 1 B. 2 C. 4 D. 9
 [El-Beheira 24][El-Monofia - Al-Shohdaa 24]

3. Million is the smallest number formed from _____ digits.
 A. 5 B. 6 C. 8 D. 7
 [Qena 24][Ismailia 24][El-Monofia - Berket El-Sabaa 24]

4. Milliard is the smallest number formed from _____ digits.
 A. 7 B. 8 C. 9 D. 10
 [El-Menia 24]

5. The place value of the digit 7 in the number 7,213,455,686 is _____.
 A. Millions B. Ten Millions C. Millions D. Ten Thousands
 [Kafir El-Sheikh 24]

6. The value of the digit 6 in the Ten Millions place equals _____.
 A. 60,000 B. 6,000,000 C. 60,000,000 D. 600,000,000
 [Kafir El-Shiekh 24]

7. The value of digit 7 in number 7,125,801 is _____.
 A. 7 B. 70 C. 7,000 D. 7,000,000
 [El-Beheira - Maths' Inspection 23]

8. The value of digit 6 in number 2,476,217 is _____.
 A. 60 B. 600 C. 6,000 D. 60,000
 [El-Menia Official Lang. School 23]

9. The value of the digit 0 in the number 301,572,941 is _____.
 A. 0 B. 100 C. 1,000 D. 100,000

10. The value of the digit 5 in the number 2,456,300 is _____.
 A. 5 millions. B. 50 millions. C. 50 thousands. D. 500 thousands.

11. The period of the underline digits in the number 25,613,729,114 is _____.
 A. Millions. B. Millions. C. Thousands. D. Ones.

12. In which number does the 8 have a value of eight hundred ?
 A. 538,419 B. 781,015 C. 271,825 D. 419,782

13. The number in which the digit 7 has the greatest value is _____.
 A. 821,730,521 B. 152,007,000 C. 51,078,623 D. 7,810,521

14. In the number 34,042, the digit 4 in the Thousands place is equal to _____ times the digit 4 in the Tens place.
 A. 10 B. 100 C. 1,000 D. 10,000
 [Cairo - Maths Inspection 22]

15. If a digit moves one space to the left on the place value chart, its value equals _____ times.
 A. 1 B. 10 C. 100 D. 1,000

Lessons 3 & 4

- Many Forms to Write Numbers
- Composing and Decomposing

Learn 1 Many ways to write numbers

The distance between Jupiter and the sun is about 778,340,821 km.



Place-Value Chart								
MILLIONS			THOUSANDS			ONES		
H	T	O	H	T	O	H	T	O
7	7	8	3	4	0	8	2	1

Standard Form : 778,340,821

"Commas are used to show periods"

Expanded Form : 700,000,000 + 70,000,000 + 8,000,000
+ 300,000 + 40,000 + 800 + 20 + 1

"Zeroes are not needed in expanded form because there is nothing in that place value; as 0 in Thousands place".

Word Form : Seven hundred seventy-eight million, three hundred forty thousand, eight hundred twenty-one.

"Commas are used to separate Millions, Thousands and Ones periods".

Short-Word Form : 778 million, 340 thousand, 821.

Notes

- We use standard form most often.
- Numbers written in expanded form show the value of each digit.

Notes for parents :

- Your child may be confused about how to represent a place value with a 0 digit in expanded form. For example : 30,456 = 30,000 + 400 + 50 + 6. The 0 is not represented in expanded form because in standard form the 0 represents that there is nothing in that place value.

Example 1

Write each number in standard form.

- a. $9,000,000,000 + 300,000,000 + 20,000,000 + 600,000 + 400 + 30$
 b. Three milliard, six hundred million, five hundred forty thousand, six hundred fifty.

Solution 

- a. 9,320,600,430
 b. 3,600,540,650

Example 2

Write each number in word form.

- a. 4,008,011,091
 b. $60,000,000 + 7,000,000 + 200,000 + 40,000 + 500 + 10 + 3$

Solution 

- a. Four milliard, eight million, eleven thousand, ninety-one.
 b. Sixty-seven million, two hundred forty thousand, five hundred thirteen.

Example 3

Write each number in expanded form.

- a. 1,300,040,005
 b. 50,600,204

Solution 

- a. $1,000,000,000 + 300,000,000 + 40,000 + 5$
 b. $50,000,000 + 600,000 + 200 + 4$



 **Check** your understanding

Complete.

- a. $5,000,000,000 + 70,000 + 1,000 + 40 + 9 =$ _____ [in standard form]
 b. Fifty-eight million, thirty-seven thousand, fourteen = _____ [in standard form]
 c. $3,300,030,303 =$ _____ [in word form]
 d. $7,608,490 =$ _____ [in expanded form]

- Your child may struggle to say large numbers and need to be reminded to group the numbers into periods as he/she reads them aloud.
- Remind your child to use commas when writing numbers in the word form.

Learn 2 Composing and decomposing numbers

- **Composing** numbers means [put together], and **decomposing** numbers means [broken apart].
- You can decompose the number **5,456,387** in different ways using place-value chart :

MILLIONS			THOUSANDS			ONES		
H	T	O	H	T	O	H	T	O
		5	4	5	6	3	8	7

► 1st way : Expanded Form :

$$5,456,387 = 5,000,000 + 400,000 + 50,000 + 6,000 + 300 + 80 + 7$$

► 2nd way :

$$5,456,387 = [5 \times 1,000,000] + [4 \times 100,000] + [5 \times 10,000] + [6 \times 1,000] + [3 \times 100] + [8 \times 10] + [7 \times 1]$$

Example 4

Complete the following.

a. Composed : 8,035,402,176

Decomposed : _____

b. Composed : _____

Decomposed : $[7 \times 1,000,000] + [9 \times 100,000] + [8 \times 1,000] + [2 \times 10] + [5 \times 1]$

Solution

a. Decomposed : $[8 \times 1,000,000,000] + [3 \times 10,000,000] + [5 \times 1,000,000] + [4 \times 100,000] + [2 \times 1,000] + [1 \times 100] + [7 \times 10] + [6 \times 1]$

b. Composed : 7,908,025

✓ Check your understanding

Complete the following.

a. Composed : 7,504,092,415

Decomposed : _____

b. Composed : _____

Decomposed : $[3 \times 1,000,000,000] + [2 \times 100,000,000] + [5 \times 10,000,000] + [4 \times 100,000] + [7 \times 10,000] + [8 \times 1,000] + [6 \times 10] + [9 \times 1]$

Notes for parents :

- Make sure that your child knows the difference between the terms compose and decompose.
- Make sure that your child knows how to represent a zero in a place when the number is decomposed.

Exercise

2

on lessons 3&4

► Many Forms to Write Numbers

► Composing and Decomposing

● REMEMBER

● UNDERSTAND

● APPLY

● PROBLEM SOLVING

From the school book

Many forms to write numbers

1. Write each number in standard form.

- a. Four hundred and nine. _____ [El-Monofia - Quesna 22]
- b. 34 million, 97 thousand. _____ [Giza - Kerdasa 22]
- c. Three million, two hundred fourteen thousand, nine hundred thirty-six.
_____ [El-Menia - Samalot 22]
- d. Five hundred twenty-seven million, nine hundred thousand, six hundred forty.

- e. Three milliard, four hundred two million, seventeen. _____
- f. $20,000 + 7,000 + 400 + 20 + 2$ _____
- g. $70,000,000 + 126,000 + 450$ _____ [El-Menia - Der Mawas 22]

2. Write the expanded form of each of the following.

- a. 1,756,300 _____
- b. 54,632,405 _____
- c. 701,462,051 _____
- d. 9,989,791,985 _____
- e. 35 million, 17 thousand, 230 _____
- f. Two milliard, four hundred twenty million, three hundred fifty-two thousand, one hundred three _____

3. Write each number in word form.

- a. 3,562,504 _____
- b. 54,213,450 _____
- c. 5,408,921,002 _____

- d. $700,000 + 60,000 + 20 + 9$ _____
- e. $5,000,000,000 + 7,000,000 + 900,000 + 3,000 + 20$ _____

4. Complete the following.

- a. The standard form of the number "3 million, 21 thousands and 509" is _____ [Alex. - Agmy 24]
- b. The standard form of the number "one million, twenty-four thousand" is _____ [Alex. - Agmy 24]
- c. The standard form of the number "6 million, 221 thousand" is _____ [Alex. - Agmy 24]
- d. 8 million, 555 thousand, 666 = _____ [Cairo 24]
- e. 5 milliard, 5 thousand and 5 = _____ [El-Menia 24]
- f. 4 milliard, 25 million, 67 thousand, 59 = _____ [Kafr El-Sheikh 24]
- g. Three millions, three thousands, three in standard form is _____ [Giza 24]
- h. Five million, six hundred fifty thousand and sixteen is _____ [Ismailia 24]
- i. $5,000,000 + 20,000 + 3,000 + 600 + 40 =$ _____ [standard form]. [Alex. 24]
- j. $700,000 + 40,000 + 2,000 + 300 + 70 + 2 =$ _____ [El-Menia - Malawi 24]
- k. $4 + 500 + 3,000 + 800,000 =$ _____ [El-Monofia - Berket El Sabaa 24]
- l. The number 6 million, 543 thousand, 210 in standard form is _____ [Giza - October Gardens 24]
- m. The standard form of the number 1 million, 235 thousand and 789 is _____ [Souhag 23]
- n. $7,625 = 5 + 7,000 + 20 +$ _____ [Aswan 23]
- o. $3,000,000 + 8,000 + 400 + 30 + 3 =$ _____ [Alexandria - First Montaza 23]

Compsing and decomposing numbers

5. Decompose the following numbers using expanded form.

- a. $170,392 =$ _____ + _____ + _____ + _____ + _____
- b. $105,208 =$ _____ + _____ + _____ + _____
- c. $601,207 =$ _____ [El-Menia 2022]
- d. 2 million, 277 thousand, 191 = _____
- e. 17 million, 230 thousand, 14 = _____
- f. Three milliard, one hundred thirty-seven million, six hundred nineteen thousand, eighty-eight = _____

6. Fill in the missing numbers. Use the place-value chart to help you.

a. Composed : 6,124,030,420

Decomposed : _____

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

b. Composed : _____

Decomposed : _____

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O
5	4	0	0	1	5	9	0	2	4

c. Composed : _____

Decomposed : $[7 \times 1,000,000,000] + [5 \times 10,000,000] + [4 \times 10,000] + [3 \times 1,000]$
 $+ [5 \times 100] + [9 \times 1]$

MILLIARDS	MILLIONS			THOUSANDS			ONES		
O	H	T	O	H	T	O	H	T	O
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

7. Complete the table.

	Composed	Decomposed
a.	4,040,400	_____
b.	_____	$[2 \times 1,000,000,000] + [5 \times 1,000,000] + [6 \times 100,000]$ $+ [7 \times 1000] + [9 \times 100] + [2 \times 10] + 7$
c.	_____	$9,000,000 + 50,000 + 3,000 + 700 + 60 + 9$
d.	9,210,031,458	_____

Challenge

8. Write 16 ten thousands + 5 thousands + 64 tens in standard form. _____

9. Find two 9-digit numbers with the difference between them is one million.
_____ and _____





Multiple Choice Questions

Choose the correct answer.

1. The number building of the number :
9,231,043,204 is called _____ form.

[Aswan 23]

A. decomposed B. standard
C. expanded D. word

2. The number 10 million, 175 thousand, 314 is written in the standard form _____

[El-Monofia - Al-Shohdaa 24]

A. 10,157,314 B. 10,571,413
C. 10,175,314 D. 10,751,314

3. What is the standard form of eighteen million, six hundred five thousand ?

[Alexandria - El-Montaza 22]

A. 18,605,000 B. 81,605,000
C. 1,860,500 D. 18,650,000

4. The standard form of 5 million, 36 thousand and 206 is _____

[Cairo 23]

A. 5,000,036,206 B. 5,036,206
C. 532,206 D. 5,360,206

5. The number 2 million, 300 thousand in standard form is _____

[El-Kalyoubia 23]

A. 2,300,000 B. 2,000,300
C. 2,300 D. 2,003,000

6. Nine millions and six hundreds = _____

[Souhag 24]

A. 600,900 B. 900,600
C. 960,000 D. 9,000,600

7. The number 1 milliard, 235 million, 127 in standard form = _____

[Cairo 24]

A. 1,235,000,127 B. 1,235,127
C. 1,272,351 D. 1,235,127,000

8. $9,000,000 + 6,000 + 50 + 6 =$ _____

[Port Said 24]

A. 9,656 B. 960,666
C. 6,569 D. 9,006,056

9. $5,000,000 + 40,000 + 5,000 + 600 + 30 + 4 =$ _____

[Cairo - Misr El Kadima 24]

A. 5,456,304 B. 5,045,634
C. 5,405,634 D. 504,534

10. The number 173 million, 904 thousand, 562 in standard form is _____

[El-Dakahlia 22]

A. 173,000,904,562 B. 173,940,562
C. 173,904,562 D. 173,562,904

11. The number 309,602 [in expanded form] is _____

[Port Said 24]

A. $2 + 60 + 900 + 3,000$
B. $2 + 600 + 9,000 + 30,000$
C. $2 + 600 + 9,000 + 300,000$
D. $2 + 60 + 9,000 + 300,000$

12. $[3 \times 1,000] + [3 \times 10] =$ _____

[El-Menia 24]

A. 300 B. 3,030
C. 3,300 D. 30,030

13. The composed number of $[7 \times 100,000] + [2 \times 1,000] + [3 \times 100] + [5 \times 1]$ is _____

[Alex. - Agmy 24]

A. 720,351 B. 702,305 C. 72,305 D. 702,350

CONCEPT 2

Using Place Value

► Lessons 5&6

Comparing Big Numbers
Comparing Numbers in Multiple Forms

Learning Objectives:

- Students will use place value to compare large numerals.
- Students will use symbols to express numerical comparisons.
- Students will compare numbers in multiple forms.
- Students will describe strategies for comparing numbers in multiple forms.

► Lesson 7

Descending and Ascending Numbers

Learning Objectives:

- Students will order numbers in multiple forms.
- Students will describe strategies for ordering numbers in multiple forms.

► Lesson 8

Rounding Rules

Learning Objectives:

- Students will apply multiple strategies to round numbers.
- Students will discuss whether rounding or front-end estimation provide a more accurate estimate.

Fast Fact

The Nile River is the longest river in the world. It has a length about **[6,659 kilometers]**. Compare its length with the Amazon. The Amazon is about **[6,400 kilometers]** long.



Lessons 5 & 6

- ▶ Comparing Big Numbers
- ▶ Comparing Numbers in Multiple Forms

Learn How to compare numbers ?

First Comparing numbers have different numbers of digits

When comparing numbers, the number which has more digits is the greater.

For Example : $5,302,200 > 899,529$

because 5,302,200 has more digits than 899,529

Second Comparing numbers have the same number of digits

- You can compare two numbers with the same number of digits **by starting at the left and moving right** until you come to a pair of digits that **do not have the same value**.

For Example :

To compare 12,673 and 12,763. Start at the left. Check each place until the digits are different.

Step 1

Compare the Ten
Thousands.

$12,673$
↓ same digit of Ten
Thousands
 $12,763$

Step 2

Compare the
Thousands.

$12,673$
↓ same digit
of Thousands
 $12,763$

Step 3

Compare the
Hundreds.

$12,673$
↓ $7 > 6$
 $12,763$

Then $12,763 > 12,673$

More Examples :

• $754,042 < 755,950$

• $755,972 < 1,752,421$

• $42,437 > 42,347$

• $6,406,367 = 6,406,367$

Notes for parents :

- Ask your child to consider how many digits are in a number when he/she compares.

Example 1

Write [$>$, $<$ or $=$] to compare.

a. 37,048 37,184

b. 217,906 271,906

c. 4,010,065 4,000,056

d. 810,340 810,340

Solution 

a. 37,048 $<$ 37,184

b. 217,906 $<$ 271,906

c. 4,010,065 $>$ 4,000,056

d. 810,340 $=$ 810,340

Example 2

Complete.

a. The smallest number formed from 3, 7, 1, 9, 2, 6, 5, is _____

b. The smallest number formed from 8, 5, 0, 1, 3, 9 is _____

c. The greatest number formed from 4, 2, 1, 3, 7, 6, 5 is _____

d. The greatest number formed from 5, 0, 6, 2, 1, 7, 4 is _____

Solution 

- To create the greatest number, arrange the digits from greatest to least.
- To create the smallest number, arrange the digits from least to greatest.

a. 1, 235, 679

b. 103, 589

c. 7, 654, 321

d. 7, 654, 210

Note

If the digits contains "Zero" you can't put it on the left of the number.

 **Check** your understanding

Write [$>$, $<$ or $=$] to compare.

a. 2,346 2,338

b. 478,765 479,112

c. 723,215 723,215

d. 752,321,271 72,321,271

e. 503,278,105 503,279,100

f. 7,492,102,235 7,491,102,235

Notes for parents :

- If your child has difficulty making comparisons, let him/her first circle the place where the digits are different.

Learn How to compare numbers in multiple forms ?

- You can compare numbers in any forms : standard, expanded and word form.
- You may convert to standard form to compare, or use place value in expanded form or in word form to compare.

Example 3

Write ($>$, $<$ or $=$) to compare.

- | | | |
|---|-----------------------|---|
| a. $70,000 + 4,000 + 50 + 7$ | ☐ | $70,000 + 4,000 + 500 + 70$ |
| b. Two milliard, seven hundred thirty-eight thousand, ten. | ☐ | Two milliard, seven hundred thirty-five thousand, eleven. |
| c. $3,000,000 + 7,000 + 800 + 9$ | ☐ | Three million, seven thousand, eight hundred nine. |
| d. $[7 \times 1,000,000] + [5 \times 100,000] + [3 \times 1,000] + [4 \times 100] + [9 \times 1]$ | ☐ | $7,000,000 + 500,000 + 3,000 + 400 + 90$ |

Solution 

- a. $<$ b. $>$ c. $=$ d. $<$

 **Check** your understanding

Write ($>$, $<$ or $=$) to compare.

- | | | |
|---|-----------------------|---|
| a. $500,000 + 70,000 + 90 + 8$ | ☐ | $1,000,000 + 5,000 + 1$ |
| b. Three milliard, two hundred fifty-two thousand, three hundred four. | ☐ | Three milliard, two hundred fifty-two thousand, thirty-four. |
| c. $[8 \times 1,000,000] + [6 \times 1,000] + [5 \times 100] + [7 \times 10]$ | ☐ | $[8 \times 1,000,000] + [2 \times 10,000] + [6 \times 1,000] + [5 \times 100] + [9 \times 1]$ |
| d. $2,000,000,000 + 400,000,000 + 2,000 + 30 + 2$ | ☐ | $2,000,000,000 + 50,000,000 + 8,000,000 + 9,000 + 50 + 9$ |

- Your child may struggle with comparing numbers in word form or expanded form. He/she may convert to standard form to compare.

Exercise

3

on lessons 5&6

► Comparing Big Numbers

► Comparing Numbers in Multiple Forms

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Compare. Write ($>$, $<$ or $=$).

a. 707

770

c. 10,525

10,255

e.  123,568

123,978

g.  2,450,890,007

2,500,000,000

i. 89,418,147

89,418,247

k. 1,000,000,000

900,000,000

b. 1,207

1,207

d. 190,098

19,098

f.  6,235,678

6,235,508

h. 7,798,562,415

7,798,567,999

j. 571,600,254

571,600,329

l. 100,000,000

99,999,999

2. Compare. Write ($>$, $<$ or $=$).

a.

40,000

400 thousands

b.

7 ten thousands

7,000

c.

7,000 millions

7 milliards

d.

5 milliards, 367 thousands

5,367,000,000

e.

Ninety-seven million, three hundred one

$90,000,000 + 7,000,000 + 3,000 + 1$

f. 

5,193,492,500

Five milliard, three hundred million, seven hundred fifteen thousand, forty-three.

g. 

$[7 \times 100,000,000] + [4 \times 10,000,000] + [9 \times 10,000] + [8 \times 100] + [1 \times 10]$

$70,000 + 9,000 + 600 + 40 + 3$

h. 

8,040,761,903

$8,000,000,000 + 400,000,000 + 700,000 + 60,000 + 1,000 + 900 + 3$

- i.  Seventeen million, four hundred twenty-five thousand, six hundred five.  17,420,605
- j.  Four hundred twenty-three thousand, twelve  $400,000 + 30,000 + 2,000 + 20 + 1$

3. Complete.

- a. The smallest number formed from 8, 2, 9, 0, 5, 1, 7 = _____ [Souhag 24]
- b. The smallest number formed from the digits 2, 0, 5, 3 is _____ [El-Monofia - Menof 24]
- c. The smallest number formed from the digits 6, 0, 9, 8, 4, 2 and 3 is _____ [Port Said 24]
- d. The greatest number consists of the digits 9, 5, 0, 2, 8 is _____ [Cairo - Helwan 24]
- e. The greatest number formed from the digits 3, 7, 1, 0, 4, 2 is _____ [Port Said 24]

4. Find each missing digit.

- | | | |
|-------------------------------|--------------------------------|--------------------------------|
| a. $6,106 > 6 \square 19$ | b. $2,117 = \square,117$ | c. $4,382 < 4,3 \square 2$ |
| d. $91,472 > 9 \square,472$ | e. $114,899 < 114, \square 99$ | f. $703,9 \square 1 = 703,981$ |
| g. $11,234 > 1 \square,785$ | h. $67,813 > 67,8 \square 3$ | i. $82, \square 88 = 82,588$ |
| j. $179,00 \square < 179,001$ | k. $856, \square 34 < 856,134$ | l. $683,129 < 6 \square 3,129$ |

5. Write a number.

- a. Create a number that is less in the Hundred Thousands place than [$<$] 893,820
- b. Create a number that is greater in the Millions place than [$>$] 178,462,490
[Cairo - Heliopolis 23]
- c. Create a number that is less in the Ten Millions place than [$<$] 32,427,400
- d. Write a number in expanded form that is equal to [$=$] 2,445,232,197

Challenge

6. Describe the error in the following number sentence, and then explain how you would correct it. $24,152,614 < 24,125,614$
7. Which is greater, the number that is 1,000 less than 13,495 or the number that is 10,000 less than 23,495?

A
B
C
D

Multiple Choice Questions

Choose the correct answer.

1. 62,234 ——— 62,324 [Alex. - Al-Agamy 23]

- A. = B. > C. <

2. 1,248,056 ——— 998,578

[El-Monofia - Sadat City 23]

- A. > B. < C. =

3. 6,235,678 ——— 6,235,508 [Beni Suef 24]

- A. > B. <
C. = D. ≤

4. 2,450,890 ——— 2,500,000 [Alex. 24]

- A. < B. >
C. = D. ≥

5. 3,230,765 ——— 1,987,374 [Souhag 23]

- A. < B. =
C. > D. ≤

6. 44,000,271 ——— 4,000,271 [Cairo 24]

- A. > B. <
C. = D. non of them

7. 45,254,369 ——— 45,678,124 [Alex. 23]

- A. > B. =
C. < D. ≥

8. 55,000,888 ——— 51,999,777 [Souhag 24]

- A. < B. >
C. = D. ≤

9. 3,000 thousand ——— 9 hundred thousand [Alex. - Agmy 24]

- A. > B. < C. =

10. 501 thousand ——— 3,000 thousand [Alex. - Agmy 24]

- A. > B. < C. =

11. 9 million ——— 8,978,269

[El-Monofia - Menof 24]

- A. < B. =
C. > D. Otherwise

12. 6 million, 400 thousand ——— 6,040,000

[El-Monofia 24]

- A. < B. =
C. > D. Otherwise

13. Which of the following statements is

TRUE ? [Cairo - Heliopolis 23]

- A. $4646 < 4664$ B. $4646 > 4664$
C. $4664 > 4664$ D. $4646 = 4664$

14. Which number sentence is NOT TRUE ?

- A. $2,304 < 2,340$
B. $27,920 > 27,790$
C. $1,005,301 > 1,050,901$
D. $80,044 < 80,404$

Lesson 7

Descending and Ascending Numbers

Learn Ordering numbers

The table shows the population of four governorates in Egypt in 2021. You can order the governorates by their population from greatest to least as follows :



1. The number 10,058,942 has the most number of digits, so it is the greatest number.
2. The number 450,528 has the least number of digits, so it is the least number.
3. Compare 5,452,718 and 5,510,876 which have the same number of digits.
Check each place until the digits are different.

Governorate	Population
Cairo	10,058,942
North Sinai	450,528
Alexandria	5,452,718
Souhag	5,510,876

Step 1

Compare the Millions.

5,452,718



5,510,876

same digit
of Millions

Step 2

Compare the Hundred Thousands.

5,452,718



5,510,876

5 > 4

Then: 5,510,876 > 5,452,718

From above :

10,058,942 > 5,510,876 > 5,452,718 > 450,528

- In order of their population, the governorates are Cairo, Souhag, Alexandria and North Sinai.

Notes for parents :

- Remind your child to start comparison at the greatest place value.

Example 1

Write these numbers in an ascending order.

2,896,016

1,188,580

2,517,550

Solution**Step 1**

Write the numbers, lining up places. Determine the smallest number.

2,896,016

1,188,580 ← smallest

2,517,550

Step 2

Write the remaining numbers, lining up places. Compare.

2,896,016

2,517,550 ← smaller

Step 3

Write the numbers from least to greatest.

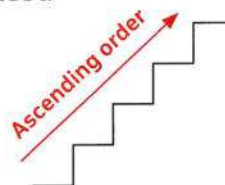
1,188,580

2,517,550

2,896,016

**Remember**

Ascending order is ordering numbers from least to greatest.

**Example 2**

Write each of the following numbers in standard form, then arrange them in a descending order.

- $[7 \times 1,000,000,000] + [4 \times 10,000,000] + [5 \times 1,000] + [3 \times 100]$
- Seven milliard, four hundred million, one thousand, two
- $7,000,000,000 + 500,000,000 + 600,000 + 300$
- 745,300

Solution

Standard form	Descendingly
7,040,005,300	7,500,600,300
7,400,001,002	7,400,001,002
7,500,600,300	7,040,005,300
745,300	745,300

**Remember**

Descending order is ordering numbers from greatest to least.

**Check your understanding**

Arrange the following in a descending order, using the standard form.

- Three milliard, forty million, seventy-one thousand, ten.
- $[3 \times 1,000,000,000] + [5 \times 1,000,000] + [7 \times 1,000] + [1 \times 100] + [1 \times 10]$.
- $3,000,000,000 + 30,000,000 + 10$
- 3,300,710,400

Notes for parents :

- If your child has trouble ordering numbers, ask him/her to align the numbers vertically and compare digits from left to right.
- Remind your child about the meaning of the two terms ascending order and descending order.

Exercise 4 on lesson 7

Descending and Ascending Numbers

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Write the numbers in an ascending order.

- a. 8,092,561 , 9,208,111 , 7,534,786 , 8,650,336

[El-Beheira 23]

The order is : _____ , _____ , _____ , _____

- b. 1,282,756 , 3,012,427 , 988,423 , 3,105,338

[El-Monofia - Sadat city 23]

The order is : _____ , _____ , _____ , _____

- c. 430,000,459 , 43,000,549 , 403,000,456 , 430,549,000

The order is : _____ , _____ , _____ , _____

2. Write the numbers in a descending order.

- a. 450,321 , 504,321 , 321,405 , 342,150 , 540,312

[Giza 23]

The order is : _____ , _____ , _____ , _____ , _____

- b. 6,562,942,735 , 6,942,735 , 6,562,942,375 , 6,942,537

The order is : _____ , _____ , _____ , _____

- c. 4,237,651 , 4,273,653 , 495,627 , 4,237,690

The order is : _____ , _____ , _____ , _____

3. List the following data in a descending order. You may use word or standard form.

- Three milliard, ten million, one thousand, thirty-four.
- Three milliard, one million, three hundred twenty-three thousand, three hundred ninety-one.
- Three milliard, nine hundred ninety thousand, nine hundred ninety-two
- Three milliard, one hundred ten million, ninety-nine thousand, four hundred ninety-three.

4. List the following in an ascending order. Use standard form.

- a.  • 654,301 • Six hundred fifty-four thousand, three hundred ten.
 • 604,320 • 654,311
 • Five hundred ninety-nine thousand, three hundred ten.

The order is : _____

- b. • $3,000,000 + 400,000 + 5,000 + 3$
 • Three million, four hundred fifty thousand, three.
 • 3,453,000 • 3,450,030

The order is : _____

5. List the numbers in a descending order. Use standard form.

- a. • Two milliard, four million, seven hundred thousand.
 • 2,400,700,000 • 2,040,007,000 • Three milliard.

The order is : _____

- b. • $5,000,000,000 + 40,000,000 + 5,000,000 + 7,000 + 90$
 • $[6 \times 1,000,000,000] + [3 \times 10,000,000] + [5 \times 1,000,000] + [6 \times 10,000] + [9 \times 100]$
 • Five milliard, forty-one million, seven thousand, ninety
 • $6,000,000,000 + 40,000,000 + 5,000,000 + 10,000 + 7,000 + 90$
 • 6,025,060,990

The order is : _____

6. List the numbers in an ascending order. Use the form in which they are given.

a.  • Four milliard, six hundred thousand, four.

• 461,014

• Four milliard, six hundred thousand forty.

• $[4 \times 1,000,000,000] + [4 \times 100,000] + [6 \times 10]$

• 6,400,042

The order is : _____

b. • Nine million, seven hundred thirty-one thousand, seventy.

• 90,731,007

• 900,080,500

• $9,000,000 + 700,000 + 40,000 + 50$

• Seven hundred million, eighty-four.

The order is : _____

7. List the numbers in a descending order. Use the form in which they are given.

a. • 900 thousand.

• 9 million.

• 5 million and 7 hundred thousand.

• 550,223

[Giza - El-Haram 22]

The order is : _____

b. • Four milliard, six hundred thousand, four.

• 461,014

• Four milliard, six hundred thousand, forty.

• $[4 \times 1,000,000,000] + [4 \times 100,000] + [6 \times 10]$

• 6,400,042

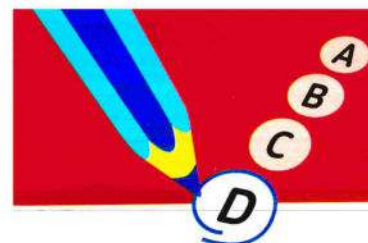
The order is : _____

Challenge

8. The following numbers are arranged in a descending order :

3,751,924,096 $\longrightarrow$ 3,751,924,069 $\longrightarrow$ 3,751,624,096 $\longrightarrow$ 3,751,624,069

If you replace each 6 by 9 and each 9 by 6, what do you notice ?



Multiple Choice Questions

Choose the correct answer.

1. Which of the following shows the numbers in a descending order ?

A. 580 , 735 , 757 , 573

B. 735 , 508 , 573 , 757

C. 735 , 757 , 573 , 580

D. 757 , 735 , 580 , 573

[Giza - Awseem 22]

2. Which of the following is a correct ascending order ?

[Cairo - Heliopolis 23]

A. 757 , 573 , 508 , 735

B. 573 , 757 , 735 , 580

C. 573 , 580 , 735 , 757

D. 580 , 573 , 757 , 735

3. Which choice shows the numbers in a descending order ?

A. 1. 3,456,871

B. 1. 7,456,232

C. 1. 5,786,321

D. 1. 1,263,572

2. 3,578,462

2. 6,785,000

2. 5,795,786

2. 12,213,573

3. 987,541

3. 6,670,785

3. 5,895,432

3. 4,262,563

4. 5,743,261

4. 5,700,726

4. 6,721,000

4. 1,000,000,000

5. 8,784,561

5. 5,700,624

5. 7,000,000

5. 7,865,321,000

4. Given the following numbers :

a $[6 \times 100,000] + [4 \times 10,000] + [5 \times 1,000] + [3 \times 100] + [1 \times 1]$

b Six hundred fifty-three thousand, three hundred, ten.

c 604,302

d Five hundred eighty-eight thousand, three hundred, ten.

Which choice shows these numbers in an ascending order ?

A. a , c , b , d

B. d , c , a , b

C. d , b , a , c

D. d , a , c , b

5. Which of the following digits makes the sentence true ? $785 > 7 \quad 5 > 755$

A. 2

B. 4

C. 6

D. 8

6. The table below shows the average distances from the planets to the Sun.

Planet	Jupiter	Mars	Venus	Earth
Distance from the Sun in km	778,340,821	227,943,000	108,209,000	149,598,000

Which planet from above is nearest to the Sun ?

A. Jupiter

B. Mars

C. Venus

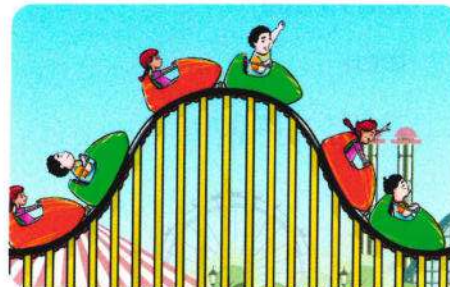
D. Earth

Rounding Rules

Learn Different ways to round a number

A roller coaster that is 2,181 meters long. About how long is the roller coaster?

Since you do not need an exact number, you can **estimate** by **rounding** the number.



Different Ways to round 2,181 to the nearest thousand.

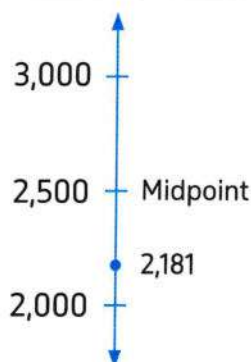
Way 1 You can use [midpoint strategy].

2,181 is closer to 2,000 than to 3,000

So, round 2,181 to 2,000

Written as $2,181 \approx 2,000$

and read as 2,181 approximately equals 2,000



Way 2 You can use [place value strategy]

Step 1

Find the place you want to round to. Circle the digit in that place.

2, 181

Thousands place

Step 2

Look at the digit to its right. Underline that digit.

2, 181

digit to the right

Step 3

- If the underlined digit is 5 or greater, round up.
- If the underlined digit is less than 5, round down.
- Change each digit to the right of the rounding place to 0
- 1 is less than 5, so

2, 181 **rounds to** 2,000

Then, the roller coaster is about 2,000 meters long.

Notes for parents :

- Remind your child to round up if the digit to the right of the place value he/she wants to round to is equal to or greater than 5.

Example 1

Use the midpoint strategy to round each of the following.

a. 74,231 [to the nearest 1,000]

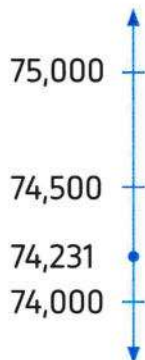
b. 9,360 [to the nearest 100]

Solution 

a. 74,231 is between 74,000 and 75,000

then

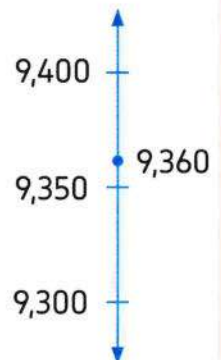
$$74,231 \approx 74,000$$



b. 9,360 is between 9,300 and 9,400

then

$$9,360 \approx 9,400$$



Example 2

Use the place value strategy to round each of the following.

a. 2,618 [to the nearest 10]

b. 174,568 [to the nearest 10,000]

c. 3,697,852,721 [to the nearest Ten Million]

d. 7,556,462 [to the nearest Million]

e. 999,999 [to the nearest Ten Thousand]

f. 13,999,999 [to the nearest Hundred]

Solution 

a. $2,6\text{1}8 \approx 2,620$ (8 > 5)

b. $174,5\text{6}8 \approx 170,000$ (4 < 5)

c. $3,697,852,721 \approx 3,700,000,000$ (7 > 5)

d. $7,556,462 \approx 8,000,000$ (5 = 5)

e. $999,999 \approx 1,000,000$ (9 > 5)

f. $13,999,999 \approx 14,000,000$ (9 > 5)

Rounding Rule :

Circle the digit, look next door.

5 or higher ? Add one more.

4 or less ? Let it rest.

Remember

The digits to the right become zeroes.

**ERROR
ALERT**

When you round a 9 to the next greater digit, remember to regroup to the next place value.

 **check** your understanding

Round the following.

a. 85,721 $\xrightarrow[\text{1,000}]{\text{to the nearest}}$ _____

b. 3,562,291 $\xrightarrow[\text{Ten Thousand}]{\text{to the nearest}}$ _____

c. 3,895 $\xrightarrow[\text{Hundred}]{\text{to the nearest}}$ _____

d. 9,999,998 $\xrightarrow[\text{Million}]{\text{to the nearest}}$ _____

Notes for parents :

- If necessary, allow your child to write the standard form of the number before rounding.

Exercise

5

on lesson 8

Rounding Rules

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Round the numbers to the nearest Ten.

- a. $423 \approx$ _____ b. $549 \approx$ _____ c. $495 \approx$ _____ d. $1,287 \approx$ _____

2. Round the numbers to the nearest Hundred.

- a. $874 \approx$ _____ b. $416 \approx$ _____ c. $4,398 \approx$ _____ d. $1,952 \approx$ _____

3. Round the numbers to the nearest Thousand.

- a. $8,090 \approx$ _____ b. $234,432 \approx$ _____
c. $9,900 \approx$ _____ d. $7,578 \approx$ _____

4. Round the numbers to the nearest Ten Thousand.

- a. $37,205 \approx$ _____ b. $58,936 \approx$ _____
c. $290,290 \approx$ _____ d. $7,435,026,353 \approx$ _____

5. Round the numbers to the nearest Hundred Thousand.

- a. $483,267 \approx$ _____ b. $678,090 \approx$ _____
c. $449,300 \approx$ _____ d. $12,786,500 \approx$ _____

6. Round the numbers to the nearest Million.

- a. $5,367,544 \approx$ _____ b. $20,843,267 \approx$ _____
c. $135,984,600 \approx$ _____ d. $2,453,000,601 \approx$ _____

7. Round the numbers to the nearest Billion.

- a. $5,266,747,023 \approx$ _____ b. $10,944,352,543 \approx$ _____

8. Complete.

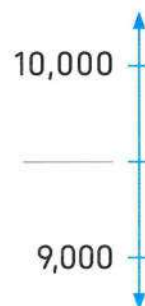
- a. $3,446 \approx$ _____ [to the nearest Thousand] [Cairo 24]
b. $56,621 \approx$ _____ [to the nearest Thousand] [Alex. - El-Montaza 24]
c. The number 543,186 to the nearest Thousand is _____ [Cairo - Heliopolis 22]
d. The number 163,518,943 to the nearest Million is _____ [Matrouh 22]
e. $34,279 \approx$ _____ [to the nearest Ten Thousand] [El-Monofia - Sadat City 23]
f. $4,369 \approx$ _____ [to the nearest 100] [Cairo - El-Nozha 23]
g. $16,401 \approx$ _____ [to the nearest Thousand] [Alex. - El-Montaza 23]

9. Round each of the following by using the midpoint strategy, record the midpoint of the number line and the place of each number, then round to the nearest Thousand.

a.  6,700 $\approx$ _____



b.  9,340 $\approx$ _____



c.  16,401 $\approx$ _____



d. 19,654 $\approx$ _____



10. Draw the number line, label the midpoint, and then round each of the following numbers.

a.  250,000 [to the nearest Hundred Thousand]

b.  700,500 [to the nearest Hundred Thousand]

c. 362,261 [to the nearest Ten Thousand]

d. 36,951 [to the nearest Hundred]

11. Write 5 numbers if rounded to the nearest Thousand the result is 312,000.

Challenge

12. What is the greatest whole number that rounds to 300,000? What is the least?



Multiple Choice Questions

Choose the correct answer.

1. $6,438 \approx 6,400$ [to the nearest _____]

[El-Menia - Dier Mawas 24]

- A. Unit B. Ten
C. Hundred D. Thousand

2. $25,638 \approx 26,000$ [rounding to the nearest _____]

[Giza 24]

- A. Ten thousand B. Thousand
C. Hundred D. Ten

3. $3,965,832 \approx 4,000,000$ to the nearest _____

[Cairo 24]

- A. Million B. Milliard
C. Hundred Thousand D. Ten Thousand

4. $2,357 \approx$ _____ [rounding to the nearest Ten]

[Giza 23]

- A. 2,360 B. 2,358
C. 2,350 D. 2,400

5. When approximating the number 3,629 to the nearest Hundred, the result is _____

[Souhag 23]

- A. 3,600 B. 3,700
C. 3,000 D. 3,620

6. A bee hive contains 102,635 bees, the number of bees to the nearest Ten Thousand is _____

[El-Monofia - Berket El-Sabaa 23]

- A. 100,000 B. 10,000
C. 102,010 D. 12,090

7. $614,231 \approx$ _____ [rounding to nearest Hundred Thousand]

[Alex. Agmy 24]

- A. 600,000 B. 700,000
C. 614,000 D. 4,000

8. Rounding the number 34,089 to the nearest Ten Thousand is _____

[Beni Suef 24][El-Sharkia 22]

- A. 34,000 B. 34,090
C. 30,000 D. 35,000

9. Rounding the number 3,854,125 to the nearest Million is _____

[Giza - October Gardens 24]

- A. 2,000,000 B. 3,000,000
C. 4,000,000 D. 5,000,000

10. Which answer represents rounding 32,582,346 to the nearest Million ?

[Giza - Awseem 23][Suez 22]

- A. 30,000,000 B. 32,600,000
C. 32,000,000 D. 33,000,000

11. Which answer could be rounded to 120,000 when rounded to the nearest Ten Thousand?

[Suez 22]

- A. 125,678 B. 116,034
C. 112,625 D. 20,789

12. Round 6,749,001,551 to the nearest Milliard.

[Beni Suef 22]

- A. 6,000,000,000 B. 7,000,000,000
C. 6,700,000,000 D. 8,000,000,000

Unit One Assessment



1. Choose the correct answer.

1. The digit in ten thousands place in the number 6,387,512 is _____. [El-Menia 23]
A. 3 B. 4 C. 7 D. 8
2. Milliard is the smallest _____ - digit number. [Cairo 23]
A. 5 B. 10 C. 9 D. 8
3. The place value of the digit 6 in 56,724,033 is _____. [El-Beheira - Math Inspection 23]
A. Thousands. B. Hundred Thousand.
C. Millions. D. Ten Million.
4. The value of the digit 3 in 53,496,752 is _____. [Aswan 23]
A. 30 B. 30,000 C. 3,000,000 D. 300,000
5. Rounding the number 34,089 to the nearest Ten Thousand is _____. [Cairo - Heliopolis 23]
A. 34,000 B. 34,090 C. 30,000 D. 35,000
6. The standard form of : three hundred thirty-two million, forty-five thousand, two hundred five is _____. [Cairo - Helwan 24]
A. 205,045,332 B. 332,045,205 C. 231,430,24 D. 231,043,042
7. 3,752,000 _____ three milliard, twenty.
A. > B. < C. =

2. Complete the following.

1. One million is the smallest number formed from _____ digits. [Aswan 23]
2. The smallest number formed from the digits 9, 4, 2, 6, 0, 5, 1 is _____. [Giza 24]
3. The value of the digit 6 in 61,230,478 is _____. [Cairo - Misr EL-Kadima 24]
4. The place value of 2 in the number 6,268,503 is _____. [Kafr EL-Sheikh 24]
5. $80,000,000 + 124,000 + 650 =$ _____
6. $735,462 \approx$ _____ [Rounded to the nearest Ten Thousand]
7. 3,504,800,501 in expanded form is _____
8. $5,856,469 \approx 5,900,000$ [Rounded to the nearest _____]

3. Choose the correct answer.

- Rounding 32,582,346 to the nearest Million equals _____ [Cairo - Misr El-Kadima - 24]
 A. 30,000,000 B. 32,600,000 C. 32,000,000 D. 33,000,000
- The largest 5-digit number is _____
 A. 10,000 B. 100,000 C. 99,999 D. 98,765
- 100,000 is _____ times the number 10,000
 A. 10 B. 100 C. 1,000 D. 10,000
- What is the standard form for three milliard, seven hundred thirty-five thousand, fifty ?
 A. 3,735,000,050 B. 3,735,500 C. 3,000,735,050 D. 3,735,050
- Rounding the number 765,017 to the nearest Hundred Thousand is _____ [Alex.-Al-Agamy 23]
 A. 770,000 B. 800,000 C. 700,000 D. 760,000
- $[6 \times 1,000,000] + [5 \times 100,000] + [3 \times 1,000] + [2 \times 100] =$ _____ [Port Said - 24]
 A. 2,305,600 B. 3,605,200 C. 6,305,200 D. 6,503,200
- The place value of the digit 3 in the number 5,316,725,891 is _____ [Ismailia 24]
 A. Millions B. Hundred Millions
 C. Ten Millions D. Hundred Thousands

4. Answer the following.

- A plane's altitude increased by 2,721 meters.
Round this number to the nearest Hundred.
- Use the digits 7,4,2,0,3,5,6,8 to make the greatest number you can.
Then use the same digits to make the smallest number you can and round each number to the nearest Million.
- Arrange the following numbers in: 6,362,012 / 2,265,698 / 13,561,954 / 5,364,569

[Giza - October Gardens 24]

- A descending order: _____, _____, _____, _____
- An ascending order: _____, _____, _____, _____

4. Compose and decompose the following number.

MILLIARDS	MILLIONS			THOUSANDS			ONES		
0	H	T	O	H	T	O	H	T	O
2	8	0	5	4	0	0	6	9	3

Composed : _____

Decomposed : _____

THEME ONE

UNIT 2

Number Sense and Operations

Addition and Subtraction Strategies

► **Concept 1 :**

Using Addition and Subtraction Strategies

► **Concept 2 :**

Solving Multistep Problems



CONCEPT

1

Using Addition and Subtraction Strategies



► Lesson 1

Properties of Addition

Learning Objectives:

- Students will identify the properties of addition and subtraction.
- Students will explain the properties of addition and subtraction.
- Students will investigate to determine whether addition properties apply to subtraction.

► Lesson 2

Addition with Regrouping

Learning Objectives:

- Students will add multi-digit whole numbers.
- Students will estimate to determine if their answer is reasonable.

► Lesson 3

Subtraction with Regrouping

Learning Objectives:

- Students will use place value to help subtract using the standard algorithm.
- Students will subtract with regrouping.
- Students will estimate to check the reasonableness of their answers.

Fast Fact

There are over 12,000 ant species worldwide.

There are about 20,000 different species of bees in the world.

What is the difference between them ?!

Properties of Addition

Learn What are the addition properties ?

Addition properties are rules for addition that are always true.

- Commutative property.
- Identity property.
- Associative property.

Commutative Property of Addition

Sara has two boxes of apples. One of them contains 15 apples and the other one contains 10 apples. How many apples are there in the two boxes ?

Sara said

$$15 + 10 = 25$$

Ahmed said

$$10 + 15 = 25$$

So, you can note that $10 + 15 = 15 + 10$



Commutative property in addition :

You can add numbers in any order and get the same sum.

Identity Property of Addition

Maged saw 8 fish. Shady did not see any. How many fish did the boys see in all ?

If you add zero to any number, the sum is that number.

$$8 + 0 = 8$$

$$0 + 8 = 8$$

So, the boys saw 8 fish in all.

Associative Property of Addition

Bassem collected 7 brown shells, 4 white shells, and 6 gray shells. How many shells did he collect in all ?

$$\begin{array}{rcl} (7 + 4) & + & 6 \\ = & 11 & + & 6 \\ = & 17 & \end{array} \quad \begin{array}{rcl} 7 & + & (4 + 6) \\ = & 7 & + & 10 \\ = & 17 & \end{array}$$

So, $[7 + 4] + 6 = 7 + [4 + 6]$.

Bassem collected 17 shells in all.



Parenttheses [] show which numbers to add first.

You can group addends in different ways, and the sum will be the same.

Notes for parents :

- Let your child give you more examples for each property and ask him/her to explain what each property states.

Example 1

Find the missing number, and name the property you used.

a. $12 + 64 = \text{---} + 12$ []

b. $14 = 0 + \text{---}$ []

c. $[1 + 19] + 11 = 1 + [19 + \text{---}]$ []

d. $90 + \text{---} = 90$ []

Solution

a. 64 [commutative property]

b. 14 [additive identity property]

c. 11 [associative property]

d. 0 [additive identity property]

Example 2

Solve each problem, and name the property you used.

a. $12 + 28 + 30$

b. $16 + 9 + 4$

c. $12 + 28 + 15 + 35$

Solution

a. $12 + 28 + 30$ Use the associative property to group numbers that are easy to add mentally.

$$= [12 + 28] + 30$$

$$= 40 + 30$$

$$= 70$$

b. $16 + 9 + 4$

$$= 16 + 4 + 9$$
 [commutative property]
$$= [16 + 4] + 9$$
 [associative property]
$$= 20 + 9 = 29$$

c. $12 + 28 + 15 + 35$

$$= [12 + 28] + [15 + 35]$$
 [associative property]
$$= 40 + 50 = 90$$

 Check your understanding

► Complete the following.

a. $42 + \text{---} = 18 + 42$

b. $255 + \text{---} = 255$

c. $[14 + 16] + 37 = 14 + [16 + \text{---}]$

d. $17 + 23 = 23 + 17$ is --- property.

e. $[136 + 13] + 37 = 136 + [13 + 37]$ is --- property.

f. $968 + 0 = 0 + 968 = 968$ is --- property.

► Solve the problems, then name the property or properties illustrated by each problem [commutative, associative or additive identity].

a. $39 + 20 + 21 = \text{---}$

Property: ---

b. $17 + 23 + 3 = \text{---}$

Property: ---

c. $136 + 37 + 13 + 14 = \text{---}$

Property: ---

• Let your child know that he/she could use more than one property to solve a problem.

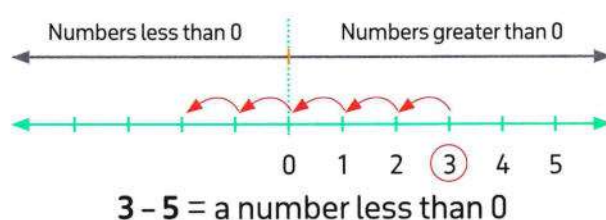
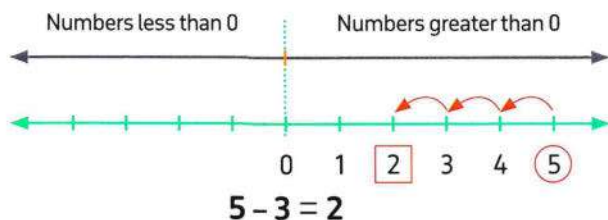
Do the addition properties apply to subtraction ?

► Is $5 - 3$ the same as $3 - 5$?

You can use the number line to answer.

Note

You will study the numbers less than 0 later in coming years.



From the above : $5 - 3 \neq 3 - 5$ [The differences are NOT the same]

You can not subtract numbers in any order and get the same difference.
So, commutative property of addition **does not apply** to subtraction.

► Subtraction has no identity.

There is no number you can subtract from any number, or subtract any number from it, the difference is that number.

► Is $[5 - 3] - 2$ the same as $5 - [3 - 2]$?

$$\begin{aligned} [5 - 3] - 2 &= 2 - 2 \\ &= 0 \end{aligned}$$

$$\begin{aligned} 5 - [3 - 2] &= 5 - 1 \\ &= 4 \end{aligned}$$

From the above : $[5 - 3] - 2 \neq 5 - [3 - 2]$ [The differences are NOT the same]

You can not group in different ways, and the difference will be the same.
So, associative property of addition **does not apply** to subtraction.



Notes for parents :

- Ask your child to create a subtraction problem to investigate if the addition properties apply to subtraction. Let your child explain using words.

Exercise

6

on lesson 1

Properties of Addition

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Choose the correct property.

- a. $[12 + 8] + 7 = 12 + [8 + 7]$ [Additive identity - Commutative - Associative]
 b. $25 + 75 = 75 + 25$ [Giza 23] [Additive identity - Commutative - Associative]
 c. $[45 + 5] + 10 = 45 + [5 + 10]$ [Additive identity - Commutative - Associative]
 d. $13 + 0 = 13$ [Giza - Abo El-Nomros 23] [Additive identity - Commutative - Associative]
 e. $26 + 10 + 34 = 26 + 34 + 10$ [Additive identity - Commutative - Associative]

2. Complete.

- a. $5 + 9 = 9 + \underline{\hspace{2cm}}$ [Cairo 23]
 b. $[61 + 23] + 24 = \underline{\hspace{2cm}} + [23 + 24]$ [Giza - Abo El-Nomros 23]
 c. $854 + 0 = \underline{\hspace{2cm}}$ [Cairo - Rod El-Farag 23]
 d. $359 + 12 = 12 + 359$ is called $\underline{\hspace{2cm}}$ property. [El-Menia 24]
 e. The additive identity element is $\underline{\hspace{2cm}}$ [El-Menia 23][El-Beheira 24]

3. Complete to find the sum.

a. $92 + 321 + 8 = 92 + 8 + 321$

[$\underline{\hspace{2cm}}$ property]

$= [\underline{\hspace{2cm}} + \underline{\hspace{2cm}}] + 321$

[$\underline{\hspace{2cm}}$ property]

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b. $1 + 16 + 4$

$= 1 + [16 + \underline{\hspace{2cm}}]$

[$\underline{\hspace{2cm}}$ property]

$= 1 + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

c. $199 + 1 + 40$

$= [\underline{\hspace{2cm}} + 1] + 40$

[$\underline{\hspace{2cm}}$ property]

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d. $5 + 7 + 8 + 3$

$= 5 + 8 + 7 + 3$

[$\underline{\hspace{2cm}}$ property]

$= [\underline{\hspace{2cm}} + \underline{\hspace{2cm}}] + [\underline{\hspace{2cm}} + \underline{\hspace{2cm}}]$

[$\underline{\hspace{2cm}}$ property]

$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

4. Solve the following problems using the associative property. Remember to solve what is in the parentheses first.

a. $[75 + 25] + 46$
 $= 100 + 46 = 146$

$75 + [25 + 46]$
 $=$ _____

$[75 + 46] + 25$
 $=$ _____

b.  $(10 + 4) + 20 + 17$
 $=$ _____

$10 + [4 + 20] + 17$
 $=$ _____

$10 + 4 + [20 + 17]$
 $=$ _____

c. $[820 + 78] + 12 + 80$
 $=$ _____

$820 + [78 + 12] + 80$
 $=$ _____

$[820 + 80] + [78 + 12]$
 $=$ _____

5. Find each sum in two different ways. Use parentheses to show which numbers you add first.

a. $30 + 70 + 15$

b. $11 + 26 + 34$

c. $220 + 88 + 80$

d. $12 + 28 + 30 + 25$

6. Use the properties of addition to solve each problem.

a. $15 + 18 + 12$ _____

b. $41 + 36 + 19$ _____

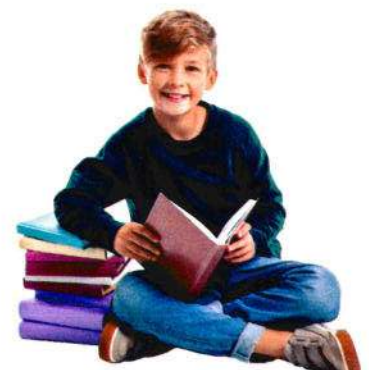
c. $421 + 9 + 29$ _____

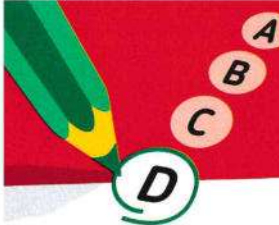
d. $342 + 4 + 8 + 46$ _____

e. $730 + 17 + 13 + 20$ _____

Challenge

7. Yahia needs to find the sum of 24 , 35 , 105 and 66.
 How can he group the addends to make it easier to add ?
 Write the property used in each step.





Multiple Choice Questions

Choose the correct answer.

1. $13 + 0 = 13$, is _____ property.

[Assiut - Manfalout 22]

- A. associative
- C. additive identity

- B. commutative
- D. none of the above

2. $19 + 36 = 36 + 19$, is _____ property.

[El-Beheira 23]

- A. commutative
- C. associative

- B. additive identity
- D. otherwise

3. $[15 + 19] + 20 = 15 + [19 + 20]$, is _____ property.

[Alex. 24]

- A. additive identity
- C. distributive

- B. commutative
- D. associative

4. The additive identity element is _____

[Ismailia 24][Alex. - El-Montaza 23]

A. 3

B. 2

C. 0

D. 1

5. $25 + 24 = 24 +$ _____

[Beni Suef 24]

A. 24

B. 25

C. 99

D. 100

6. $352 + [556 + 421] = [352 + \text{_____}] + 421$

[Alex. 24]

A. 352

B. 556

C. 421

D. 782

7. $[222 + 111] + 333 = 222 + [111 + \text{_____}]$

[Cairo 24]

A. 888

B. 111

C. 333

D. 666

8. Which of the following represents the commutative property in addition?

[El-Fayoum 22]

- A. $635 + 492 = 492 + 635$
- C. $[18 + 2] + 16 = 36$

- B. $0 + 847 = 847$
- D. $1 + 131 = 132$

9. Which equation would be best to include in an explanation of the commutative property of addition?

[El-Menia - Matay 22]

- A. $8 + 0 = 8$
- C. $3 + 18 = 3 + 11 + 7$

- B. $7 + 8 = 8 + 7$
- D. $5 + 8 = 3 + 10$

Addition with Regrouping

Learn

Mr. Faried has 129 kids toys.
He plans to buy 97 more toys.
How many toys will he have
altogether?

Add. $129 + 97$

Estimate. $100 + 100 = 200$

[Numbers are rounded to the nearest 100]



Step 1

Add ones.

$$9 + 7 = 16$$

$$\begin{array}{r} \textcircled{1} \\ 129 \\ + 97 \\ \hline 6 \end{array}$$

Regroup 16 ones
as 1 ten 6 ones

Step 2

Add tens.

$$1 + 2 + 9 = 12$$

$$\begin{array}{r} \textcircled{1} \textcircled{1} \\ 129 \\ + 97 \\ \hline 26 \end{array}$$

Regroup 12 tens as
1 hundred 2 tens

Step 3

Add hundreds.

$$1 + 1 = 2$$

$$\begin{array}{r} \textcircled{1} \textcircled{1} \\ 129 \\ + 97 \\ \hline 226 \end{array}$$

Mr. Faried will have 226 toys, and the answer is close to the estimate.
So, 226 is **reasonable**.

Example 1

Round the addends to the nearest given estimation. Find the sum.

a. $34 + 88$

[Round to the nearest 10]

b. $658 + 135$

[Round to the nearest 100]

c. $5,195 + 3,761$

[Round to the nearest 1,000]

Solution

a.

$$\begin{array}{r} \textcircled{1} \text{ Round to } 10 \\ 34 \rightarrow 30 \\ + 88 \rightarrow + 90 \\ \hline 122 \end{array}$$

The answer is
reasonable.

b.

$$\begin{array}{r} \textcircled{1} \text{ Round to } 100 \\ 658 \rightarrow 700 \\ + 135 \rightarrow + 100 \\ \hline 793 \end{array}$$

The answer is
reasonable.

c.

$$\begin{array}{r} \textcircled{1} \text{ Round to } 1,000 \\ 5,195 \rightarrow 5,000 \\ + 3,761 \rightarrow + 4,000 \\ \hline 8,956 \end{array}$$

The answer is
reasonable.

Notes for parents :

- Ask your child to find the sum of 3,659 and 1,783, then use rounding to estimate and check if the answer is reasonable or not.

Example 2

Estimate using rounding to the nearest Ten Thousand, Thousand, Hundred and Ten to check the reasonableness of the answer. Find the exact answer.

$$12,548 + 48,681$$

Solution

Round to nearest 10,000

$$\begin{array}{r} 10,000 \\ + 50,000 \\ \hline 60,000 \end{array}$$

Round to nearest 1,000

$$\begin{array}{r} \textcircled{1} \\ 13,000 \\ + 49,000 \\ \hline 62,000 \end{array}$$

Round to nearest 100

$$\begin{array}{r} \textcircled{1} \textcircled{1} \\ 12,500 \\ + 48,700 \\ \hline 61,200 \end{array}$$

Round to nearest 10

$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \\ 12,550 \\ + 48,680 \\ \hline 61,230 \end{array}$$

Exact answer

$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \\ 12,548 \\ + 48,681 \\ \hline 61,229 \end{array}$$

**Note**

The exact answer is more reasonable to estimation using rounding to the nearest Ten than rounding to the nearest other place values.

Check your understanding

1. Find the sum with regrouping.

a.

$$\begin{array}{r} 3,571 \\ + 2,989 \\ \hline \end{array}$$

b.

$$\begin{array}{r} 74,398 \\ + 68,622 \\ \hline \end{array}$$

2. Find the exact sum. Estimate using rounding to check the reasonableness of the answer.

a.

$$\begin{array}{r} 319 \\ + 63 \\ \hline \end{array} \quad \begin{array}{l} \text{Round to 100} \\ \longrightarrow \\ \text{Round to 100} \\ \longrightarrow \end{array} \quad \begin{array}{r} \\ + \\ \hline \end{array}$$

c.

$$7,354 + 906 = \underline{\hspace{2cm}}$$

b.

$$\begin{array}{r} 2,723 \\ + 3,286 \\ \hline \end{array} \quad \begin{array}{l} \text{Round to 1,000} \\ \longrightarrow \\ \text{Round to 1,000} \\ \longrightarrow \end{array} \quad \begin{array}{r} \\ + \\ \hline \end{array}$$

d.

$$45,238 + 15,762 = \underline{\hspace{2cm}}$$

c.

$$\begin{array}{r} 42,401 \\ + 17,923 \\ \hline \end{array} \quad \begin{array}{l} \text{Round to 10,000} \\ \longrightarrow \\ \text{Round to 10,000} \\ \longrightarrow \end{array} \quad \begin{array}{r} \\ + \\ \hline \end{array}$$

- Let your child create an addition problem and let him/her solve it to find the exact answer, then use rounding to check the reasonableness of the answer.

Exercise

7

on lesson 2

Addition with Regrouping

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

1. Estimate using rounding to the nearest Ten. Find the exact answer.

a.
$$\begin{array}{r} 19 \\ + 32 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

b.
$$\begin{array}{r} 351 \\ + 286 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

c.
$$\begin{array}{r} 1,578 \\ + 4,121 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

2. Estimate using rounding to the nearest Hundred. Find the exact answer.

a.
$$\begin{array}{r} 726 \\ + 89 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

b.
$$\begin{array}{r} 134 \\ + 588 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

c.
$$\begin{array}{r} 34,762 \\ + 21,384 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

3. Estimate using rounding to the nearest Thousand. Find the exact answer.

a.
$$\begin{array}{r} 3,355 \\ + 809 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

b.
$$\begin{array}{r} 26,721 \\ + 45,398 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

c.
$$\begin{array}{r} 85,632 \\ + 1,168 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

4. Round to estimate the sums. Then, solve the problems to find the exact answers.

Show your work.

a.
$$\begin{array}{r} 593 \\ + 194 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

b.
$$\begin{array}{r} 579 \\ + 62 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

c.
$$\begin{array}{r} 3,975 \\ + 8,062 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

d.
$$\begin{array}{r} 8,049 \\ + 6,199 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

e.
$$\begin{array}{r} 34,013 \\ + 9,340 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

f.
$$\begin{array}{r} 3,520 \\ + 2,401 \\ \hline \end{array}$$
 $\rightarrow$ $\begin{array}{r} \\ + \\ \hline \end{array}$

5. Find the exact sum. Estimate using rounding as the examples.

► **Examples :** • $5,432 + 1,296 = \underline{6,728}$

$\begin{array}{c} \textcircled{1} \\ \downarrow \end{array}$
 $\begin{array}{c} \downarrow \end{array}$

$5,400 + 1,300 = \underline{6,700}$

• $17,686 + 5,342 = \underline{23,028}$

$\begin{array}{c} \textcircled{1}\textcircled{1}\textcircled{1} \\ \downarrow \end{array}$
 $\begin{array}{c} \downarrow \end{array}$

$17,690 + 5,340 = \underline{23,030}$

a. $17 + 69 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

c. $4,584 + 2,428 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

e. $25,749 + 175,684 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b. $523 + 387 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

d. $69,210 + 26,428 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

f. $259,111 + 9,999 = \underline{\hspace{2cm}}$

$\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

6. Complete.

a. $227 + 293 = \underline{\hspace{2cm}}$

[Giza 24]

b. $539 + 62 = \underline{\hspace{2cm}}$

[Alex. - First Montaza 23]

c. $8,049 + 2,931 = \underline{\hspace{2cm}}$

[Aswan - Noba 23]

d. $14,275 + 15,725 = \underline{\hspace{2cm}}$

[Luxor 24]

e. $25,865 + 3,459 = \underline{\hspace{2cm}}$

[Cairo 24]

f. $91,024 + 32,549 = \underline{\hspace{2cm}}$

[El-Beheira - Hosh Essa 23]

g. $26,720 + 45,280 = \underline{\hspace{2cm}}$

[Giza 23]

h. $523,523 + 377,137 = \underline{\hspace{2cm}}$

[Souhag 24]

7. Find the sum. Compare using ($>$, $<$ or $=$).

a. $65 + 17$ $38 + 43$

b. $290 + 530$ $732 + 88$

c. $3,984 + 1,079$ $894 + 4,117$

d. $5,182 + 957$ $3,777 + 2,350$

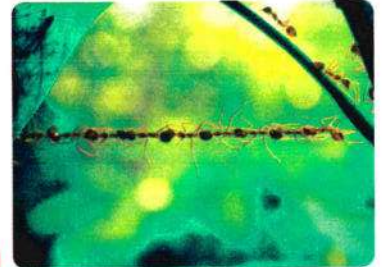
e. $90,652 + 21,911$ $37,888 + 84,675$

f. $54,186 + 11,983$ $25,649 + 40,515$

8. Answer the following problems.

- a. If 273 ships passed through the Suez Canal in January and 375 ships crossed in February. Find the total sum of ships in the two months. [El-Menia 23]

- b. A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?



[Cairo - 23] [El-Beheira - Damnhour 22]

- c. Mona has 5,235 L.E., her father gave her 2,365 L.E. How much money does Mona have now? [El-Menia 24]

- d. In a week, 7,825 tourists visited Karnak temple, and in the next week, 8,245 tourists visited it. How many tourists visited the temple in the two weeks? [Alex. 24]

- e. Heba bought a mobile for 21,675 L.E. and a laptop for 18,325 L.E. How much money did Heba pay? [Cairo 23]

- f. Ahmed and Omar participated in a project, Ahmed paid 342,650 pounds and Omar paid 245,950 pounds. Find the total cost of the project. [Alex. - Agamy 23]

- g. If 149,000 visitors visited the Great Pyramid in January and 125,000 visitors visited it in February. What is the total numbers of visitors in the two months? [Alex. - Agamy 24]

- h. The country has provided a vaccination against the Corona virus. In the first stage, 1,653,465 people were vaccinated and 3,312,447 in the second stage. What is the total number of people vaccinated in both stages ?



[Giza – Dokki 22]

Challenge

9. Complete the missing digits.

a.

$$\begin{array}{r}
 7 \quad \square, \quad 3 \quad 4 \quad \square \\
 + \quad \square \quad 2, \quad \square \quad 2 \quad 5 \\
 \hline
 9 \quad 8, \quad 6 \quad \square \quad 8
 \end{array}$$

b.

$$\begin{array}{r}
 2 \quad \square, \quad 3 \quad 8 \quad \square \\
 + \quad \square \quad 9, \quad 5 \quad \square \quad 4 \\
 \hline
 8 \quad 4, \quad \square \quad 2 \quad 5
 \end{array}$$





Multiple Choice Questions

Choose the correct answer.

1. $165 + 142 =$ _____

- ☐ A. 207 B. 23
☐ C. 307 D. 18

[Alex. - El-Montaza 23]

2. $6,199 + 8,049 =$ _____

- ☐ A. 41,248 B. 14,428
☐ C. 14,248 D. 4,428

[Aswan 23]

3. $91,024 + 32,549 =$ _____

- ☐ A. 123,563 B. 123,673
☐ C. 122,563 D. 123,573

[Giza - Haram 22]

[Cairo - Rod El-Farag 23]

4. The sum of $1,225 + 5,774 =$ _____

- ☐ A. 6,900 B. 6,999
☐ C. 6,555 D. 6,565

[Cairo - Helwan 24]

5. Which one is the sum of $\begin{array}{r} 4,568 \\ + 2,715 \\ \hline \end{array}$?

- ☐ A. 2,253 B. 6,283
☐ C. 7,273 D. 7,283

6. Which one is the sum of $\begin{array}{r} 58,607 \\ + 24,654 \\ \hline \end{array}$?

- ☐ A. 83,053 B. 83,261
☐ C. 83,361 D. 83,853

7. $3,425 + 4,768 = 193 +$ _____

- ☐ A. 8 B. 80
☐ C. 800 D. 8,000

8. $31,632 + 62,435 =$ _____

- ☐ A. $67 + 94$ B. $67 + 940$
☐ C. $67 + 9,400$ D. $67 + 94,000$

9. Which one is the correct rounding to estimate the answer of $192 + 266$?

- ☐ A. $100 + 200 = 300$
☐ B. $200 + 200 = 400$
☐ C. $100 + 300 = 400$
☐ D. $200 + 300 = 500$

10. Which one is the correct rounding to estimate the sum of $1,564 + 387$?

- ☐ A. $1,500 + 300 = 1,800$
☐ B. $1,500 + 400 = 1,900$
☐ C. $1,600 + 400 = 2,000$
☐ D. $1,600 + 500 = 2,100$

11. Which has the same sum as $654 + 1,698$?

- ☐ A. $519 + 1,832$ B. $1,394 + 958$
☐ C. $1,863 + 571$ D. $754 + 1,898$

12. $78,912$ _____ $71,147 + 7,765$

- ☐ A. $>$
☐ B. $<$
☐ C. $=$

13. Heba bought a laptop for 13,350 pounds and a TV set for 8,750 pounds.

What is the total money did she pay ?

- ☐ A. 21,000 pounds B. 21,100 pounds
☐ C. 22,100 pounds D. 23,000 pounds

Lesson

3

Subtraction with Regrouping

Learn

A factory produced 3,675 cartons of juice in a month. In the next month, the factory produced 7,869 cartons of juice.

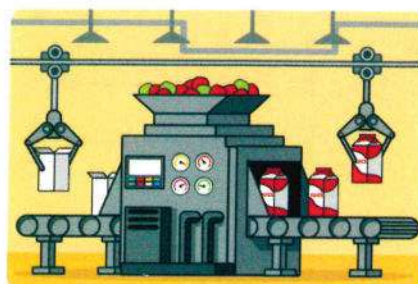
Find the difference between the number of cartons of juice in the two months.

Subtract. $7,869 - 3,675$

Estimate. $8,000 - 4,000 = 4,000$

[Numbers are rounded to the nearest 1,000]

Use the standard subtraction algorithm.



Step 1	Step 2	Step 3	Step 4
Subtract the ones.	Regroup hundreds. Subtract the tens.	Subtract the hundreds.	Subtract the thousands.
$\begin{array}{r} 7,869 \\ - 3,675 \\ \hline 4 \end{array}$	$\begin{array}{r} 16 \\ 7, \cancel{8} \cancel{6} 9 \\ - 3,675 \\ \hline 94 \end{array}$	$\begin{array}{r} 16 \\ 7, \cancel{8} \cancel{6} 9 \\ - 3,675 \\ \hline 194 \end{array}$	$\begin{array}{r} 16 \\ 7, \cancel{8} \cancel{6} 9 \\ - 3,675 \\ \hline 4,194 \end{array}$

So, the difference is 4,194 cartons of juice.

The answer is close to the estimate, so 4,194 is reasonable.

Note that :

$$\begin{array}{r} 7,869 \xrightarrow{\text{Round to } 1,000} 8,000 \\ - 3,675 \xrightarrow{} - 4,000 \\ \hline 4,194 \end{array}$$

[It is close to the exact answer]

$$\begin{array}{r} 7,869 \xrightarrow{\text{Round to } 100} 7,900 \\ - 3,675 \xrightarrow{} - 3,700 \\ \hline 4,194 \end{array}$$

[It is more close to the exact answer]

$$\begin{array}{r} 7,869 \xrightarrow{\text{Round to } 10} 7,870 \\ - 3,675 \xrightarrow{} - 3,680 \\ \hline 4,194 \end{array}$$

[It is more close to the exact answer than rounding to Thousand or rounding to Hundred]

Notes for parents :

- The exact answer is more reasonable to estimation using rounding to the nearest 10 than rounding to the nearest other place values.

Example 1

Find the difference. Round to the given estimation to check the reasonableness of the answer.

a. $531 - 278$ [Round to the nearest Ten]

b. $7,419 - 1,742$ [Round to the nearest Hundred]

Solution

a.

$$\begin{array}{r} \overset{4}{\cancel{5}} \overset{12}{\cancel{3}} \overset{11}{\cancel{1}} \\ - 278 \\ \hline 253 \end{array} \xrightarrow{\text{Round to 10}} \begin{array}{r} \overset{4}{\cancel{5}} \overset{13}{\cancel{3}} 0 \\ - 280 \\ \hline 250 \end{array}$$

[The answer is reasonable]

b.

$$\begin{array}{r} \overset{6}{\cancel{7}} \overset{13}{\cancel{4}} \overset{11}{\cancel{1}} 9 \\ - 1,742 \\ \hline 5,677 \end{array} \xrightarrow{\text{Round to 100}} \begin{array}{r} \overset{6}{\cancel{7}} \overset{14}{\cancel{4}} 00 \\ - 1,700 \\ \hline 5,700 \end{array}$$

[The answer is reasonable]

Example 2

Estimate using rounding to the nearest 10, 100, 1,000 and 10,000 to check the reasonableness of the answer. Find the exact difference. $46,853 - 19,729$

Solution

Round to nearest 10

$$\begin{array}{r} \overset{3}{\cancel{4}} \overset{16}{\cancel{6}} 850 \\ - 19,730 \\ \hline 27,120 \end{array}$$

Round to nearest 100

$$\begin{array}{r} \overset{3}{\cancel{4}} \overset{16}{\cancel{6}} 900 \\ - 19,700 \\ \hline 27,200 \end{array}$$

Round to nearest 1,000

$$\begin{array}{r} 47,000 \\ - 20,000 \\ \hline 27,000 \end{array}$$

Round to nearest 10,000

$$\begin{array}{r} 50,000 \\ - 20,000 \\ \hline 30,000 \end{array}$$

Exact difference

$$\begin{array}{r} \overset{3}{\cancel{4}} \overset{16}{\cancel{6}} \overset{4}{\cancel{8}} \overset{13}{\cancel{5}} \overset{3}{\cancel{3}} \\ - 19,729 \\ \hline 27,124 \end{array}$$

The exact difference is more reasonable to estimation using rounding to the nearest 10 than rounding to 100, 1,000 or 10,000

Check your understanding

Solve the following problems using the standard subtraction algorithm.

Then, round each number to the nearest Ten, Hundred Thousand or Ten Thousand to check the reasonableness of your answers.

a. $4,271 - 1,834$

b. $52,329 - 31,255$

c. $608,452 - 109,786$

- Remind your child to look at each exercise carefully and decide how he/she needs to regroup before proceeding.

Exercise

8

on lesson 3

Subtraction with Regrouping

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Use the standard subtraction algorithm to solve the problems. Then, round each number to the nearest Thousand to check the reasonableness of your answer.

a.
$$\begin{array}{r} 9,263 \\ - 3,842 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 1,816 \\ - 1,066 \\ \hline \end{array}$$

e.
$$\begin{array}{r} 46,835 \\ - 19,727 \\ \hline \end{array}$$

g.
$$\begin{array}{r} 23,640 \\ - 14,635 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 6,625 \\ - 4,417 \\ \hline \end{array}$$

d.
$$\begin{array}{r} 25,884 \\ - 18,875 \\ \hline \end{array}$$

f.
$$\begin{array}{r} 24,305 \\ - 3,071 \\ \hline \end{array}$$

h.
$$\begin{array}{r} 538,109 \\ - 321,299 \\ \hline \end{array}$$

2. Use the standard subtraction algorithm to solve the following problems. Then round to the nearest Thousands to check the reasonableness of your answer as the examples.

► Examples:
$$\begin{array}{r} 11 \\ 4 \cancel{1} 14 \\ 5,246 \\ - 2,873 \\ \hline 2,373 \end{array}$$

$$\begin{array}{r} 5,000 \\ - 3,000 \\ \hline 2,000 \end{array}$$

$$\begin{array}{r} 9 \\ 713 \cancel{3} 1012 \\ 83,402 \\ - 58,336 \\ \hline 25,066 \end{array}$$

$$\begin{array}{r} 83,000 \\ - 58,000 \\ \hline 25,000 \end{array}$$

a. $2,654 - 1,431 = \underline{\hspace{2cm}}$

c. $7,326 - 5,296 = \underline{\hspace{2cm}}$

e. $238,763 - 18,764 = \underline{\hspace{2cm}}$

g. $542,302 - 281,976 = \underline{\hspace{2cm}}$

b. $3,458 - 2,064 = \underline{\hspace{2cm}}$

d. $70,623 - 30,611 = \underline{\hspace{2cm}}$

f. $853,004 - 45,878 = \underline{\hspace{2cm}}$

h. $721,010 - 350,891 = \underline{\hspace{2cm}}$

3. Complete.

- a. $3,728 - 1,596 = \underline{\hspace{2cm}}$ [EL-Monofia - Al-Sadat 24]
- b. $2,617 - 1,716 = \underline{\hspace{2cm}}$ [EL-Beheira 24] [EL-Monofia 24]
- c. $4,725 - 3,482 = \underline{\hspace{2cm}}$ [Qena 23]
- d. $2,615 - 1,309 = \underline{\hspace{2cm}}$ [Cairo - Rod El-Farag 23]
- e. $8,742 - 2,136 = \underline{\hspace{2cm}}$ [Souhag 23]
- f. $69,263 - 25,185 = \underline{\hspace{2cm}}$ [Port Said 24]
- g. $862,492 - 657,837 = \underline{\hspace{2cm}}$ [EL-Monofia 24]
- h. $284,615 - 196,392 = \underline{\hspace{2cm}}$ [Kafr El-Sheikh 24]
- i. $5,000 - 2,451 = \underline{\hspace{2cm}}$ [Cairo 24]
- j. $8,000 - 3,999 = \underline{\hspace{2cm}}$ [Cairo 23]

4. Find the results, complete using ($>$, $<$ or $=$).

- a. $3,250 - 137$ ☐ $3,250 - 731$ b. $7,431 - 250$ ☐ $9,302 - 250$
- c. $849 - 598$ ☐ $1,000 - 750$ d. $12,926 + 19,809$ ☐ $57,400 - 24,865$
- e. $18,654 - 367$ ☐ $10,000 + 8,000 + 200 + 80 + 7$

5. Solve the following story problems.

- a. A road of 675 km length. If a train traveled a distance of 239 km from this road.
What is the remaining distance of the road ? [EL-Beheira 23] [Alex. - Montaza 23]
- _____
- _____
- b. Hassan has 8,460 pounds. He bought a phone for 3,650 pounds.
Find the money remained with him. [Alex. 23]
- _____

- c. There are 7,258 ants in the colony. 2,147 ants are females and the rest are males.
How many males are in the colony ?

[Souhag 23]

- d. There are 20,000 ants in the colony. If 1,500 ants went out to find food, how many ants did not leave the colony ?

[Cairo 24]

- e. Samir and Mohamed participated in a project.
Samir paid 342,650 pounds. If the cost of the project is 668,500 pounds, how much is Mohamed paying ?

[El-Menia 22]



- f. If the population of Matrouh Governorate is 517,901 people, and the population of South Sinai Governorate is 112,211, then what is the difference between the population of Matrouh Governorate and the population of South Sinai Governorate ?

[El-Gharbia - Qotour 22]

[El-Monofia - Berket El-Sabaa 23]



- g. Mohamed has 15,000 L.E. He bought a computer with 7,250 L.E. and a mobile with 4,750 L.E.
Find the reminder with him.

[Cairo - El-Salam 23]



- h.  A trap jaw ant wanted to cross a river that was 3,548 cm across. The ant had already swum 1,672 cm. How much farther does the ant have to go ?



- i.  Two colonies of fire ant were stuck in a flood and made floating rafts to survive. The first colony had approximately 1,267 ants and the second had 3,452 ants. How many more ants were in the second colony ?



- j.  A fire ant colony has 255,000 ants. A Gigantiops destructor ant colony has 6,200 ants. What is the difference between the size of the two colonies ?



Challenge

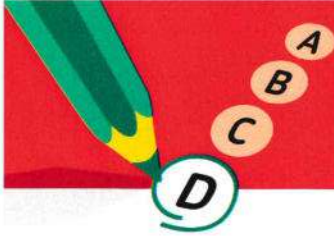
6. Write the missing digits.

a.

	3		7
—	5		7
	3	0	2

b.

	3	6	4
—	1	2	
	1		



Multiple Choice Questions

Choose the correct answer.

1. $557 - 283 =$ _____ [El-Monofia 24]

- A. 763 B. 274
C. 427 D. 724

2. Subtract : $613 - 247 =$ _____

- [El-Menia 24] [Cairo 22]
[Cairo - Al-Khalifa 23] [El-Beheira - Hosh Essa 23]
A. 567 B. 434
C. 366 D. 807

3. $1,325 - 820 =$ _____ [Kafr El-Sheikh 24]

- A. 305 B. 405
C. 505 D. 1,505

4. $5,683 - 2,647 =$ _____

- [Giza - October Gardens 24]
A. 3,030 B. 3,036 C. 3,044

5. $6,458 - 2,566 =$ _____ [Cairo 24]

- A. 3,892 B. 2,892
C. 3,928 D. 2,928

6. $3,328 - 2,164 =$ _____ [Aswan 23]

- A. 1,641 B. 1,614
C. 1,164 D. 1,146

7. Find the difference :
$$\begin{array}{r} 457,206 \\ - 124,680 \\ \hline \end{array}$$

- A. 332,486 B. 332,526
C. 333,486 D. 333,526

8. $8,000 - 2,345 =$ _____ [Cairo 23]

- A. 10,345 B. 6,345
C. 5,655 D. 5,565

9. $125,217 + 2,345$ _____ $125,217 - 2,345$

- A. > B. < C. =

10. A local bakery sold 1,232 zalabya in one day. If they sold 876 zalabya in the morning, how many were sold during the rest of the day?

[Beni Suef 22]

- A. 356 B. 520 C. 1,588 D. 2,108

11. If Ahmed had 100 pounds, and the sum of what he and his friend had was 350 pounds. How much money did his friend have?

- A. 250 B. 150 C. 100 D. 50

CONCEPT 2

Solving Multistep Problems



► Lesson 4

Bar Models, Variables and Story Problems

Learning Objectives:

- Students will use letters to represent unknown quantities in equations.
- Students will use bar models to represent and solve story problems.
- Solve for the variable in an equation.

► Lesson 5

Solving Multistep Story Problems with Addition and Subtraction

Learning Objectives:

- Students will solve multistep story problems.
- Students will explain how they solved multistep story problems.

Fast Fact

Female kangaroos sport a pouch on their belly (made by a fold in the skin) to cradle baby kangaroos, called joeys. If a female weighs 35 kg, and weighs holding her joey 38 kg. What is the weight of her joey?

Lesson 4

Bar Models, Variables and Story Problems

Learn 1

How do you write a number sentence to solve a problem ?

Suppose you have 225 L.E. to spend.
How much money will you have
left if you bought the soccer socks ?

Soccer Gear Sale!	
Soccer socks	90 L.E.
Goalie gloves	120 L.E.
Shinguards	225 L.E.

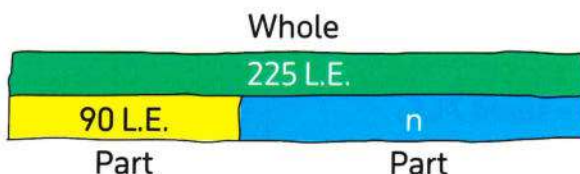


Plan and Solve

What strategy will you use ?

Strategy : Write a Number Sentence using bar models.

[Where : n shows the money left]



1. From the bar model :

$$90 + n = 225$$

2. Subtract to find n

$$n = 225 - 90$$

$$n = 135$$

Answer : You will have 135 L.E. left.



Look Back and Check

Is your answer reasonable ? $90 + 135 = 225$ Yes, it checks.

Notes for parents :

- Ask your child : Why is subtraction used for this problem ? He/she may answer "Subtraction is used because I need to find the part that is left".

How to use a bar model to solve an equation ?

- You can represent the number sentence :
 $3 + 2 = 5$ by the opposite bar model.

5	
3	2

- Study the following bar model and its facts :

whole: A	
part: B	part: C

• $A = B + C$

Add to find the whole.

$B = A - C$

Subtract to find a part

$C = A - B$

Subtract to find a part

Identifying the Main Idea

Identifying the main idea when you read in math can help you use the **problem-solving strategy**, and write a number sentence.

The main idea here is part-part-whole, with the whole unknown.



Nader spent 7 L.E. on Monday and 8 L.E. on Tuesday.
How much money did he spend in all on both days ?

n	
7	8

• Equation $7 + 8 = n$

Add to find the whole.

Part $\oplus$ Part $=$ Whole

$7 + 8 = n$

Sally had 10 L.E. After she bought a book, she had 4 L.E. left.
What did the book cost ?

10	
n	4

• Equation $n + 4 = 10$

Subtract to find a part.

Whole $\ominus$ Part $=$ Part

$10 - 4 = n$

The main idea here is part-part-whole, with one part unknown.



Notes for parents :

- If your child has trouble writing number sentences for problems, tell him/her to figure out the main idea in the problem, draw a picture for it, and then decide which operation it calls for.

Example 1

There are 5,526 bees in a hive.

In this hive 3,491 are males and the rest are females.

How many females in this hive ?

Solution

• The whole is : 5,526 • One part is : 3,491 (males)

• The second part is unknown : x (females)

• Bar model :

5,526	
3,491	x

• Equation : $3,491 + X = 5,526$

• Solution : $X = 5,526 - 3,491 = 2,035$ females.

How to write a number sentence (or equation)

Step 1 Show the main idea.

Step 2 Decide which operation fits the main idea.

Step 3 Use a letter to show what you are trying to find.

Step 4 Solve the number sentence.

Note

You can write many equations for this problem

$$3,491 + X = 5,526$$

,

$$X + 3,491 = 5,526$$

$$5,526 - 3,491 = X$$

or

$$5,526 - X = 3,491$$

The value of x is the same.

Check your understanding

If the number of visitors of the Pyramids in one month is 183,523 and the number of foreign visitors is 38,191

, find the number of Egyptian visitors.

Equation : _____

Solution : _____

Bar model

- If your child writes only the answer, ask him/her to reread the directions, and write a number sentence that is including a letter stands for the unknown.

Learn 2 Solving equations with variables

- An **equation** is a number sentence stating that two amounts are equal.
- A **variable** is a letter in the equation that you should find its value.
- Solving an equation means finding the value of the variable that makes the values of its two sides equal.

Example 2

Solve the equation by using a bar model : $14 - d = 8$

Solution 

• Bar model :

14	
d	8

• Solution : $d = 14 - 8 = 6$

Note

Subtract to find a part.
Whole $\ominus$ Part $\ominus$ Part

Example 3

Solve the equation by using a bar model : $y - 34,500 = 55,200$

Solution 

• Bar model :

y	
34,500	55,200

• Solution : $y = 34,500 + 55,200 = 89,700$

Note

Add to find the whole.
Part $\oplus$ Part $\ominus$ Whole

Example 4

Solve the equation by using a bar model : $74,562 + m = 125,708$

Solution 

• Bar model :

125,708	
74,562	m

• Solution : $m = 125,708 - 74,562 = 51,146$



Check your understanding

Solve the following equations by using the bar model.

a. $X + 54,600 = 87,623$

b. $76,450 - m = 15,412$

c. $p - 4,252 = 31,726$

d. $13,725 + n = 70,000$

Notes for parents :

- Ask your child to check his/her answer using fact family.

Exercise

9

on lesson 4

Bar Models, Variables and Story Problems

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Find the value of each variable in the following part-part whole tables.

a.

x	
34,750	19,051

b.

121,725	
10,714	y

c.

78,514	
a	29,125

d.

m	
41,621	52,321

2. Solving equations with variables. Create a bar model to solve each of the following problems.

a. $14,000 - n = 6,000$

Bar model :

Solution : _____

b. $m - 35,462 = 2,741$ [Ismailia 23]

Bar model :

Solution : _____

c. $b - 53,500 = 75,200$

Bar model :

Solution : _____

d. $4,641 + y = 7,548$ [El-Monofia 24]

Bar model :

Solution : _____

e. $725,625 + c = 935,075$

Bar model :

Solution : _____

f. $13,280 - d = 5,420$

Bar model :

Solution : _____

g. $5,000 + a = 7,000$ [Cairo 24]

Bar model :

Solution : _____

h. $f + 205,925 = 810,775$

Bar model :

Solution : _____

3. Complete.

- a. By using the bar model ,
the value of m = _____

m	
7,938	3,153

[Ismailia 24]

- b. In the opposite bar model ,
the value of the unknown $x =$ _____

6,232	
2,232	x

[Alex. 24]

- c. In the opposite bar model ,
the value of the unknown $C =$ _____

7,620	
C	4,310

[Giza – Awseem 23]

- d. In the opposite bar model ,
the value of $k =$ _____

4,152	
k	1,045

[Alex. – Al Agamy 23]

- e. In the equation $125 + A = 300$, then $A =$ _____

[Souhag 22]

- f. The value of the variable in the equation : $b - 1,250 = 3,000$ is _____

[El-Monofia 24] [El-Beheira 24]

- g. If $5,000 - M = 3,000$, then the value of $M =$ _____

[El-Menia 24]

- h. If $K - 490 = 4,010$, then $K =$ _____

[Cairo 24]

- i. If $A + 710 = 920$, then the value of $A =$ _____

[El-Menia 24] [El-Monofia 24]

- j. If $835 - A = 751$, then the value of $A =$ _____

[El-Fayoum 22]

- k. $4,625,269 -$ _____ $= 1,000,000$

[Port Said 22]

Story Problems

4. By using a bar model , write the equation, then find the solution.

- a. The number of boys and girls in a school is 2,340 , the number of boys in this school is 1,234
What is the number of girls in this school ?

Equation : _____

Solution : _____

Bar model

- b.  There are 12,000 species of ants. Of these 12,000 species , 2,500 species live in Africa and the rest live in other parts of the world. How many species do not live in Africa ?

Bar model

Equation : _____

Solution : _____

- c.  There are 5,328 ants in the colony. In the colony, 2,164 ants are females and the rest are males.

How many male ants are in the colony ?

Equation : _____

Solution : _____

Bar model

[Aswan - Noba 23]

- d.  In colony A , there are 1,200 ants. Some ants are out foraging for food and supplies, and 700 ants are taking out the colony's trash. How many ants are foraging for food and supplies ?

Bar model

Equation : _____

Solution : _____

Challenge

5. Solve the equation by using a bar model.

$$l + l = 8$$

Solution : _____



Multiple Choice Questions

Choose the correct answer.

1. From the opposite bar model, the value of unknown m = _____

	600
m	350

- A. 100 B. 150
C. 200 D. 250

[Cairo 24]

2. In the opposite bar model, the value of x = _____

	54,900
x	50,000

- A. 9,000 B. 4,900
C. 40,000 D. 49

[Alex. 24]

3. In the equation : $b - 4,358 = 3,422$, the value of b = _____ [Souhag 23]

- A. 7,780 B. 6,653
C. 5,662 D. 5,556

4. If $614 - x = 600$, then x = _____

- A. 11 B. 12
C. 16 D. 14

[Cairo 23]

5. The value of x in the equation : $725,625 + x = 935,075$ is _____

- A. 292,450 B. 290,450
C. 209,540 D. 209,450

[Aswan 23]

6. If $111 + x = 481$, then the value of x = _____

- A. 260 B. 370
C. 471 D. 592

[Kafir EL-Sheikh 24]

7. If $834 - X = 622$, then X = _____

- A. 300 B. 212
C. 412 D. 612

[Kafir EL-Sheikh 24]

8. If $23,080 - B = 21,980$, then B = _____

- A. 2,900 B. 2,000
C. 2,980 D. 1,100

[Alex. 24]

9. If $45,300 - A = 42,700$, then A = _____

- A. 3,400 B. 3,800
C. 2,600 D. 2,400

[Alex. 24]

10. The value of the variable in the equation :

$b + 1,000 = 4,000$ is _____

- A. 1,000 B. 2,000
C. 3,000 D. 3

[Alex. 24]

Lesson 5

Solving Multistep Story Problems with Addition and Subtraction

Learn

Some story problems have a **hidden question**.

To solve the problem, you must first find and answer the hidden question.

Example

Amgd is reading a book. He reads 96 pages in the first week and 129 pages in the second week. The book has 290 pages.

How many pages are left to read ?

Solution

- **Hidden question :**

How many pages did Amgd read in the two weeks ?

$$\text{Amgd read} = 96 + 129 = 225 \text{ pages}$$

- Use the new information to solve the problem and find the left pages.

$$\text{The left pages} = 290 - 225 = 65 \text{ pages}$$

Another Way

- **Hidden question :**

How many pages are left in the first week ?

$$290 - 96 = 194 \text{ pages}$$

- **Final answer :**

How many pages are left to read ?

$$194 - 129 = 65 \text{ pages}$$

Third Way

Bar model

290	
$96 + 129$	n

- **Equation :**

$$96 + 129 + n = 290$$

$$225 + n = 290$$

- **Answer :**

$$n = 290 - 225 = 65 \text{ pages}$$



Check your understanding

A library sold 25,325 books in the first week, 19,712 books in the second week and 28,119 in the third week. If the library had 473,590 book. How many books are left ?

Notes for parents :

- Give your child a multistep story problem and ask your child to use the solving steps to help solving the problem.

Exercise

10

on lesson 5

Solving Multistep Story Problems with Addition and Subtraction

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Answer the following problems.

- a. Mohamed bought a laptop for 6,250 L.E. and a mobile for 3,750 L.E., if he had 16,000 L.E., how much money are left with him ?

[El Monofia 24]

- b. A book contains 900 pages. If you read 423 pages in first week and 346 pages in second week. How many pages are left ?

[El-Monofia 24]

- c. Sara, Bassem and Mina are collecting stamps. Sara collected 743 stamps, Bassem collected 198 stamps and Mina collected 357 stamps. How many more stamps did Sara collect than Bassem and Mina have combined ?

- d. A factory sold 6,580 toys in the first month, 7,214 toys in the second month, and 5,975 toys in the third month. The expect number of sold toys is 25,000 toys by the end of the fourth month. How many toys are needed to be sold in the fourth month to reach this count ?

- e.  The ant colony website hopes that a new colony A with up to 173,500 will form. If a colony of 27,385 ants and a colony of 52,890 ants join the new colony, how many more ants can join ?

- f.  The Great Pyramid had 59,000 visitors in January, 27,525 visitors in February, and 32,975 visitors in March. They expect to have 150,000 visitors by the end of April. How many visitors need to show up in April to reach this count ?

- g.  New Valley has a population of 256,088. If Matrouh has a population of 429,999 and South Sinai has a population of 108,951, how many more people do Matrouh and South Sinai have combined than New Valley ? [Aswan 23]

- h.  Mariam saw on the website that several smaller Pharaoh ant colonies were joining together to form a larger colony. On Monday, 1,725 ants joined together with 22,750 ants. Then, another 6,075 ants joined. How many ants were in the larger colony on Monday ? Omar checked the website on Friday and learned that there were now 50,750 ants in the colony. How many ants had joined the colony since Monday ?

- i.  Ahmed had a pie with 340 calories for breakfast. Then, Ahmed had a glass of milk, an apple, and a chicken sandwich for lunch. The milk had 190 calories, the apple had 85 calories, and the chicken sandwich had 255 calories. If the average adult can eat 2,000 calories per day, how many more calories can Ahmed eat today ?

Challenge

2.  The opposite table represents the number of shirts in stock of a store.

Answer the following problems.

- a. How many more red shirts than green shirts ?

	Green	Red
Small	15,436	18,421
Medium	33,142	43,218
Large	5,347	14,132

- b. How many more small shirts than large shirts ?

Unit Two Assessment



1. Choose the correct answer.

1. $38 + 76 = 76 + 38$ ————— property. [Souhag 24]
A. associative B. commutative C. additive identity D. distributive
2. $5,588 + 0 = 5,588$ is using ————— property. [Alex. - Agamy 24]
A. additive identity B. commutative C. distributive D. associative
3. $[112 + 38] + 77 = 112 + [\text{—————} + 77]$
A. 38 B. 77 C. 115 D. 150
4. In the corresponding bar model:
The value of the unknown C = ————— [El-Monofia 24]
A. 700 B. 300
C. 520 D. 800
- | | |
|-----|-----|
| 500 | |
| C | 200 |
5. If $Y + 300 = 321$, then $Y =$ ————— [Cairo 24]
A. 321 B. 300 C. 31 D. 21
6. If $x - 180 = 256$, then $x =$ ————— [El-Monofia - Quesna 23]
A. 76 B. 436 C. 176 D. 406
7. Joudy found that $38,828 + 52,309 = 91,137$. Which estimate could she use to check if her answer is reasonable ?
A. $30,000 + 50,000 = 80,000$ B. $30,000 + 60,000 = 90,000$
C. $40,000 + 50,000 = 90,000$ D. $40,000 + 60,000 = 100,000$

2. Complete the following :

1. $91,024 + 32,549 =$ ————— [Cairo - Heliopolis 23]
2. The additive identity is ————— [El-Beheira - Hosh Essa 23]
3. Two ants colonies have 33,585 ants. If colony A has 17,990 ants , then the number of ants in colony B = ————— ants.
4. $15 + 5 + 7 = [15 + \text{—————}] + 7 = 15 + [5 + \text{—————}]$
5. In the bar model

1,000	
A	325

, the value of A equals ————— [Luxor 24]

6. If $n - 34 = 29$, then $n =$ _____

7. $7,000 - 350 =$ _____

8. A local bakery sold 7,120 zalabya in one day. If they sold 1,269 zalabya in the morning and 2,658 zalabya in the afternoon, then the number of zalabya sold during the rest of the day is _____ zalabya.

3. Choose the correct answer :

1. $13 + 7 = 7 + 13$, represents _____ property.

[El-Monofia - Sadat City 23]

A. commutative B. associative C. additive identity

2. In the opposite bar model, the value of $w =$ _____

[Aswan - Noba 23]

A. 2,957 B. 9,449
C. 3,043 D. 3,000

w	
6,203	3,246

3. $613 - 247 =$ _____

[Cairo - Math's Inspection 23]

A. 567 B. 343 C. 366 D. 807

4. The additive identity of addition is _____

[Giza 23]

A. 0 B. 1 C. 10 D. 2

5. $112 + 369 = 369 +$ _____

A. zero B. 369 C. 112 D. 481

6. Rana had 251,750 pounds, she bought a mobile for 5,555 pounds and a car for 125,780 pounds, then the left money with Rana is _____ pounds.

A. 131,335 B. 120,415 C. 125,970 D. 246,195

7. $3,508 + 3,692 =$ _____

A. 61,190 B. 184 C. 7,190 D. 7,200

4. Answer the following.

1. Find a. $\begin{array}{r} 3 & 2 & 1 & 8 & 4 \\ + 4 & 5 & 5 & 9 & 3 \end{array}$

b. $734 - 245 =$ _____

[Cairo 24]

2. Nader made 18 pieces of falafel. He ate 6 pieces and his brother ate 5 pieces.

Represent these data using bar model to show how many pieces are left ?

3. Mohamed bought a laptop for 7,250 L.E. and a mobile for 4,750 L.E.

If he had 15,000 L.E., how much money are left with him?

[El-Beheira 24]

4. A bridge of ants consists of 692 ants and another bridge consists of 165 ants, how

many ants are there in two bridges ? [Beni Suef 24] [Port Said 24] [Cairo - Math's Inspection 23]

THEME ONE

UNIT 3

Number Sense and Operations

Concepts of Measurement

- ▶ **Concept 1 :**
Metric Measurement
- ▶ **Concept 2 :**
Measuring Time



CONCEPT

1

Metric Measurement

► Lesson 1

Measuring Length

Learning Objectives:

- Students will explain the relationship between metric units of length.
- Students will convert between metric units of length.

► Lesson 2

Measuring Mass

Learning Objectives:

- Students will explain the relationship between metric units of mass.
- Students will convert between metric units of mass.

► Lesson 3

Units of Capacity

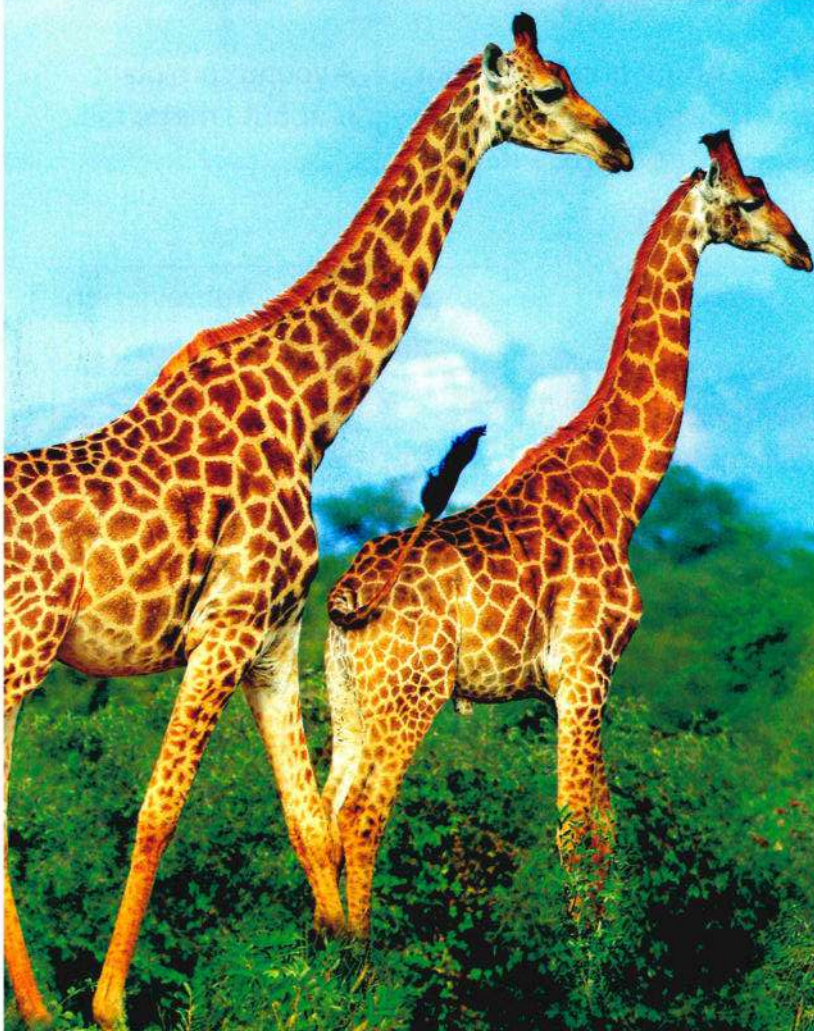
Learning Objectives:

- Students will explain the relationship between metric units of capacity.
- Students will convert between metric units of capacity.

Fast Fact

► Giraffes' long necks allow them to reach the leaves on treetops. A giraffe is the tallest land mammal. Some giraffes can be as tall as **6 meters** !

► The elephant is the largest land mammal. Elephants can weigh as much as **[7,250 kilograms]**. They drink **110 to 180 liters** of water a day !
A baby elephant is called a calf.



Lesson

1

Measuring Length

Learn

Meter, decimeter, centimeter and millimeter are four units of measuring lengths.



A corn kernel is about **10 millimeters long**.



An ear of corn is about **20 centimeters long** or **2 decimeters long**.



A young corn plant is about **1 meter tall**.

Relating Units of Length

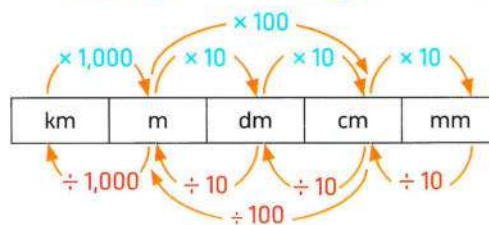
Table of Measures

1 kilometer = 1,000 meters
1 meter = 100 centimeters
1 meter = 10 decimeters
1 decimeter = 10 centimeters
1 centimeter = 10 millimeters

	Name	Abbreviation
Length units	Kilometer	km
	Meter	m
	Decimeter	dm
	Centimeter	cm
	Millimeter	mm

Converting Metric Length Units

- When you change **larger** units to **smaller** units **multiply**.
- When you change **smaller** units to **larger** units **divide**.



Example 1

Fill in blanks.

a. 8 m = _____ cm

c. 130 mm = _____ cm

e. 5 km = _____ cm

b. 700 cm = _____ m

d. 15,000 m = _____ km

f. 8 km = _____ dm

Notes for parents :

- Let your child understand that when converting from larger length unit to smaller length unit he/she can multiply by 10, 100, 1,000, ...

Solution

- a. $8\text{ m} = 800\text{ cm}$
 c. $130\text{ mm} = 13\text{ cm}$
 e. $5\text{ km} = 5,000\text{ m}$
 $= 500,000\text{ cm}$
- b. $700\text{ cm} = 7\text{ m}$
 d. $15,000\text{ m} = 15\text{ km}$
 f. $8\text{ km} = 8,000\text{ m}$
 $= 80,000\text{ dm}$

**Example 2**

Complete each of the following.

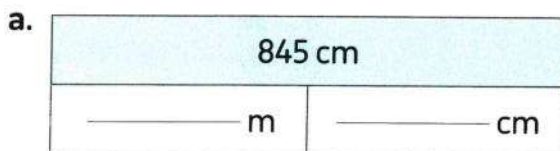
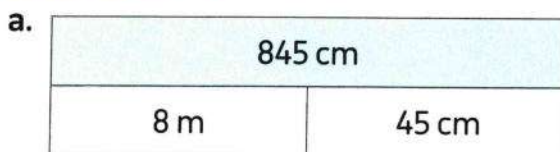
- a. $7\text{ m}, 56\text{ cm} = \text{————— cm}$
 c. $12\text{ km}, 12\text{ m} = \text{————— m}$
- b. $9\text{ cm}, 5\text{ mm} = \text{————— mm}$
 d. $4\text{ m}, 16\text{ dm} = \text{————— dm}$

Solution

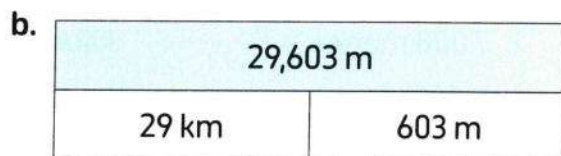
- a. $7\text{ m}, 56\text{ cm} = 700\text{ cm} + 56\text{ cm} = 756\text{ cm}$
 c. $12\text{ km}, 12\text{ m} = 12,000\text{ m} + 12\text{ m} = 12,012\text{ m}$
- b. $9\text{ cm}, 5\text{ mm} = 90\text{ mm} + 5\text{ mm} = 95\text{ mm}$
 d. $4\text{ m}, 16\text{ dm} = 40\text{ dm} + 16\text{ dm} = 56\text{ dm}$

Example 3

Convert the lengths into the units on the bar models.

**Solution** 

[**Think** : $845 = 800 + 45$]



[**Think** : $29,603 = 29,000 + 603$]

 Check your understanding

Complete each of the following.

- a. $600\text{ mm} = \text{————— cm}$
 c. $500\text{ dm} = \text{————— m}$
 e. $563\text{ cm} = \text{————— m}, \text{————— cm}$
- b. $600\text{ cm} = \text{————— m}$
 d. $3\text{ km} + 300\text{ m} = \text{————— m}$

• Let your child explain the relationships between the metric length units "km , m , dm , cm , mm".

Exercise

11

on lesson 1

Measuring Length

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Circle the best unit to measure each length.

1. Height of a student

Kilometer

Meter

Centimeter

Millimeter

2. Distance between home and school

Kilometer

Meter

Centimeter

Millimeter

3. Length of the Nile River

Kilometer

Meter

Centimeter

Millimeter

4. Length of an ant

Kilometer

Meter

Centimeter

Millimeter

5. Distance from Cairo to Alexandria

Kilometer

Meter

Centimeter

Millimeter

2. Complete.

a. 1 km = _____ m

b. 12 km = _____ m

[Port Said 24]

c. 16 cm = _____ mm

[Cairo – El-Nozha 23]

d. 12 dm = _____ cm

[Giza 23]

e. 1 m = _____ cm

f. 5 m = _____ cm

[Giza – Haram 22]

g. 7 m = _____ cm

[Cairo 23]

h. _____ kilometers = 40,000 meters

[Aswan 23]

i. 7,000 meters = _____ kilometers

[Souhag 23]

j. 9,000 mm = _____ cm

[Alex. – El-Montazah 23] [Alex. – Borg El-Arab 22]

k. 70 cm = _____ dm

[Cairo – El-Nozha 23]

l. 5 cm + 3 mm = _____ mm

[El-Menia 24]

m. 8 meters, 45 cm = _____ cm

[Port Said 24] [Cairo 24]

n. 3 m, 48 cm = _____ cm

[Port Said 24]

o. 3,924 meters = _____ kilometers, 924 meters

[Cairo 24]

p. 9,250 meters = _____ km + _____ m

[Alex. 23]

q. 27 km, 55 m = _____ m

[El-Dakahlia 22]

r. 423 cm = _____ m, _____ cm

[Alex. – Al-Agamy 23]

s. 897 mm = _____ cm, _____ mm

[Ismailia 23]

t. 5 km – 3,000 m = _____ m

[Giza 23]

3. Find the missing numbers.

a. 

230 cm	
— m	— cm

b. 

478 cm	
— m	— cm

c.

85 cm	
— dm	— cm

d.

— m	
3 km	40 m

[Cairo 23]

e. 

— cm	
5 m	91 cm

f.

— mm	
7 cm	5 mm

4. Answer each of the following.

a. List the following lengths in an ascending order :

[Cairo - Heliopolis 23]

8 m , 8,000 cm , 8 km , 8 mm

b. A train covers 3 km in one minute, what is the distance the train covers in 7 minutes in kilometers and in meters ?

c.  When scientists studied the anthill, they found that it was 8 meters deep.

1. How many centimeters would that be ? Show your work.

2. The colony had to move tons of soil to construct their nest. The worker ants had to carry loads of soil 1 kilometer to the surface. If one ant carried 10 loads of soil in a week, How many kilometers did it travel while moving soil ? How many meters ? How many centimeters ?

— km — m — cm

d.  Carpenter ants can be up to 3 centimeters long. A mature colony can have up to 100,000 ants. If the ants lined up end to end and each ant is 1 centimeter long, How many meters long would a line of 100,000 ants be ?

e.  Using the information from the previous item, How many kilometers long would the line of 100,000 ants be ?

Multiple Choice Questions

Choose the correct answer.

1. The best unit to measure the length of an ant is _____ [Alex. 24]

A. meter B. liter
C. mm D. km

2. 4 km = _____ m [El-Monofia - Sadat City 23]

A. 40 B. 400
C. 4,000 D. 4

3. 10 meters = _____ centimeters [Cairo 23]

A. 10 B. 100
C. 1,000 D. 1

4. 5,000 mm = _____ m

A. 5 B. 50
C. 500 D. 50,000

5. 62 dm = _____ cm [Alex. 24]

A. 62 B. 620
C. 6,200 D. 62,000

6. 3,000 cm = _____ m [Ismailia 24]

A. 100 B. 30
C. 3 D. 300

7. 423 cm = _____ [Giza - Awssem 23] [El-Monofia - Qesna 22]

A. 23 m , 4 cm B. 42 m , 3 cm
C. 4 m , 23 cm D. 3 m , 42 cm

8. 4 m , 16 dm = _____ dm

A. 416 B. 4,160
C. 56 D. 4,016

9. 3 km + 300 m = _____ m [Souhag 24]

A. 3,300 B. 30,300
C. 300,003 D. 303

10. 5 km , 5 m = _____ m [Giza 23]

A. 55 B. 5,050
C. 5,005 D. 5,500

11. 6 m , 50 cm = _____ cm [Giza - Abo El-Nomros 23]

A. 605 B. 650 C. 560 D. 6,500

12. Which sentence best explains the relationship between a meter and a kilometer ? [Alexandria - West 22]

A. A kilometer is equal to 100 meters. B. A kilometer is equal to 1,000 meters.
C. A meter is equal to 1,000 kilometers. D. A meter is equal to 100 kilometers.

13. Using the relationship between units of length, choose the correct answer to complete the following table : [Cairo - Heliopolis 22]

kilometer	meter	centimeter
60	60,000	?

A. 600 B. 6,000 C. 60,000 D. 6,000,000

Measuring Mass

Learn

Matter is what all objects are made of. **Mass** is the amount of matter in an object. Metric units of mass are the **gram [g]**, the **kilogram [kg]** and the **ton**.



The mass of a small paperclip is about 1 g

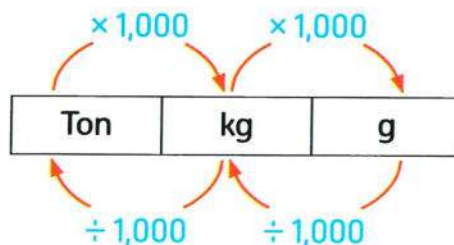


The mass of a baseball bat is about 1 kg



The mass of a car is about 1 ton

Converting Metric Mass Units



1 Ton = 1,000 kilogram

1 kilogram = 1,000 grams

1 Ton = 1,000,000 grams

Note

Mass and weight are different.

- Mass stays the same no matter where you are.
- Weight changes from a place to another, for example the weight of any object on the Earth is different from its weight on the moon.

Notes for parents :

- Ask your child to find something at home of mass 20 g , and another something of mass 1 kg.

Example 1

Complete each of the following.

a. 9 kilograms = _____ grams

c. 7 tons = _____ kilograms

e. 18 kg , 81 g = _____ g

g. _____ kg , _____ g = 8,115 g

h. _____ tons , _____ kg = 5,005 kg

b. 32,000 grams = _____ kilograms

d. 4 kg , 63 g = _____ g

f. 3 tons , 315 kg = _____ kg

Solution

a. 9 kilograms = 9,000 grams

c. 7 tons = 7,000 kilograms.

e. 18 kg , 81 g = 18,000 g + 81 g = 18,081 g

g. 8 kg , 115 g = 8,115 g

b. 32,000 grams = 32 kilograms

d. 4 kg , 63 g = 4,000 g + 63 g = 4,063 g

f. 3 tons , 315 kg = 3,000 kg + 315 kg = 3,315 kg

h. 5 tons , 5 kg = 5,005 kg

Example 2

Convert the masses into the units on the bar models.

a.

1,560 g	
_____ kg	_____ g

c.

5,555 kg	
_____ tons	_____ kg

b.

27,027 g	
_____ kg	_____ g

d.

_____ kg	
2 tons	2 kg

Solution

a.

1,560 g	
1 kg	560 g

[**Think** : 1,560 = 1,000 + 560]

c.

5,555 kg	
5 tons	555 kg

[**Think** : 5,555 = 5,000 + 555]

b.

27,027 g	
27 kg	27 g

[**Think** : 27,027 = 27,000 + 27]

d.

2,002 kg	
2 tons	2 kg

[**Think** : 2,002 = 2,000 + 2]**Notes for parents :**

- Ask your child to explain the relation between the metric mass ton and kg.

Example 3

An oat bag of mass 250 g, Dalia bought 6 bags, what is the total mass of bags in kilograms and grams ?

Solution

$$\begin{aligned}\text{The total mass} &= [250 + 250] + [250 + 250] + [250 + 250] \\ &= [500 + 500] + 500 \\ &= 1,000 + 500 = 1 \text{ kg , } 500 \text{ g}\end{aligned}$$


1 kg



Check your understanding

Complete each of the following.

- 7 kg = _____ g
- 3 tons = _____ kg
- 5,000 g = _____ kg
- 4,653 g = _____ kg , _____ g
- 4,000 kg = _____ tons
- 9 kg , 314 g = _____ g
- 7 tons , 77 kg = _____ kg
- 8,436 kg = _____ tons , _____ kg
- 2 tons = _____ g

• Let your child explain the relationship between the metric mass units "kg , g".

Exercise 12

on lesson 2

Measuring Mass

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Complete. Tell whether you multiply or divide.

-  3 kg = _____ g
-  4 kg = _____ g
-  8 kg = _____ g [Cairo 23]
-  5 tons = _____ kg [Ismailia 23]
- 7,000 g = _____ kg [Giza 24] [El-Menia 23]
- _____ tons = 19,000 kg [El-Menia 24]
-  _____ kg = 5,000 g
-  _____ kg = 30,000 g
- 5 kg and 321 g = _____ g [Souhag 23]
- 6 kg , 454 g = _____ g [Cairo 24]
- 6,450 kg = _____ kg , _____ g [Cairo 23]
- 2,456 g = _____ kg , _____ g
- 35 kg , 86 g = _____ g [Cairo 24] [Cairo - Al-Khalifa and Mokattam 23] [El-Kalyoubia 22]
- 4,535 g = _____ kg , _____ g
- 14,085 g = _____ kg , 85 g [Alex. 24]
- 7,324 kg = _____ tons , _____ kg

2. Find each missing number.

a. 

4,590 g	
_____ kg	_____ g

b. 

8,400 g	
_____ kg	_____ g

c. 

_____ g	
7 kg	414 g

d.

_____ kg	
2 ton	30 kg

3. Compare. Write ($>$, $<$ or $=$).

a. 95 kg



950 g

b. 3 kg



30,000 g

c. 400 g



400 kg

d. 2 ton



2,000 kg

e. 6 kg, 6 g



660 g

f. 2 kg, 530 g



24,000 g

4. What is the order of the following masses from least to greatest?

6 kg , 4,769 g , 2 tons , 980 kg , 68,000 g

5. A colony of black ants is estimated to weigh 3,493 grams.

Rewrite that number using kilograms and grams.

6. A different ant colony is estimated to weigh 14 kilograms and 89 grams.

Rewrite that weight in grams.

7. Use the picture.

a. What is the order of the sports balls from greatest mass to least mass?

Mass of Sports Balls			
			
Basketball		Bowling ball	
616 grams		6 kilograms	
			
Table tennis ball		Tennis ball	
3 grams		50 grams	

b. A baseball has a mass of about 145 grams.

Mariam has 2 basketballs and 2 baseballs in her gym bag.

Is the mass of the balls in her bag more or less than 2 kg? Explain.

Multiple Choice Questions

Choose the correct answer.

1. _____ is a measuring unit of mass.

[Giza 23] [El-Menia 24]

- A. km
- B. Liter
- C. Hour
- D. kg

2. 2 kg = _____ gm [Alex. - El-Montaza 23]

- A. 20,000
- B. 2,000
- C. 200
- D. 20

3. 10 kilograms = _____ grams

[Cairo - El-Nozha 23]

- A. 10
- B. 100
- C. 1,000
- D. 10,000

4. 15 kg = _____ gm

[Cairo - El-Nozha 23]

- A. 150
- B. 1,500
- C. 15,000
- D. 15

5. 5 tons = _____ kg

- A. 5
- B. 50
- C. 500
- D. 5,000

6. 5,000 grams = _____ kilograms

[Aswan 23] [Giza 24]

- A. 50
- B. 500
- C. 5
- D. 1,000

7. 12,000 gm = _____ kg [Alex. 24]

- A. 120
- B. 1,200
- C. 12,000
- D. 12

8. 12,000 kg = _____ tons

- A. 12
- B. 120
- C. 1,200
- D. 12,000

9. 9 kg, 600 g = _____ [Luxor 24]

- A. 96
- B. 906
- C. 9,600
- D. 15

10. 5 kg and 861 gm = _____ gm [Cairo 23]

- A. 5,861
- B. 58,160
- C. 5,000,861
- D. 5,861,000

11. 5 kilograms, 904 grams = _____ grams

[Cairo 24]

- A. 5,904
- B. 5,094
- C. 4,390
- D. 3,490

12. 8,600 g _____ 86 kg

- A. >
- B. <
- C. =

13. Which of the following is the greatest mass ?

- A. 900 g
- B. 20,000 g
- C. 70 kg
- D. 16 kg

Units of Capacity

Learn

Capacity is the amount of liquid a container can hold.

- A **Milliliter [mL]** and a **liter [L]** are metric units that measure capacity.

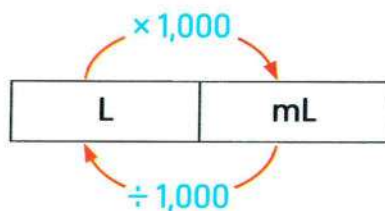


A milliliter is about
20 drops from an eyedropper.



The water bottle holds
1 liter [L] of water.

Converting Metric Capacity Units



$$1 \text{ Liter} = 1,000 \text{ milliliters}$$

Example 1

Find each missing number.

- a. 8 Liters = _____ milliliters. b. 56,000 mL = _____ L

c.

47,665 mL	
_____ L	_____ mL

- d. 13 L , 13 mL = _____ mL

Solution

- a. 8 Liters = 8,000 milliliters

c.

47,665 mL	
47 L	665 mL

- b. 56,000 mL = 56 L

- d. 13 L , 13 mL

$$= 13,000 \text{ mL} + 13 \text{ mL} = 13,013 \text{ mL}$$

Notes for parents :

- Ask your child to bring 2 containers might hold about 1 liter at home.

Example 2

Calculate.

- a. $4\text{ L} + 3,778\text{ mL} = \text{_____ L, _____ mL}$
 b. $2\text{ L}, 340\text{ mL} + 900\text{ mL} = \text{_____ L, _____ mL}$
 c. $5\text{ L} - 2,570\text{ mL} = \text{_____ L, _____ mL}$
 d. $24\text{ L}, 800\text{ mL} - 19\text{ L}, 510\text{ mL} = \text{_____ L, _____ mL}$



Solution

a. $3,778\text{ mL} = 3\text{ L}, 778\text{ mL}$

$$4\text{ L} + 3\text{ L}, 778\text{ mL} = 7\text{ L}, 778\text{ mL}$$

b. $2\text{ L}, \boxed{340\text{ mL}} + \boxed{900\text{ mL}} = 2\text{ L} + [340 + 900]\text{ mL}$
 $= 2\text{ L} + 1,240\text{ mL} = 2\text{ L} + [\boxed{1,000} + 240]\text{ mL}$
 $= 3\text{ L}, 240\text{ mL}$

c. $5\text{ L} = 5 \times 1,000 = 5,000\text{ mL}$
 $5,000\text{ mL} - 2,570\text{ mL} = [5,000 - 2,570]\text{ mL}$
 $= 2,430\text{ mL} = [\boxed{2,000} + 430]\text{ mL} = 2\text{ L}, 430\text{ mL}$

d. $24\text{ L}, 800\text{ mL}$
 $- 19\text{ L}, 510\text{ mL}$
 $\hline = 5\text{ L}, 290\text{ mL}$

Example 3

A truck consumed $1\text{ L}, 560\text{ mL}$ of gas in the first hour and $1\text{ L}, 840\text{ mL}$ in the second hour. Write the amount of gas consumed by the truck in liters and milliliters in the two hours.

Solution

$$\begin{array}{r} 1\text{ L}, 560\text{ mL} \\ + 1\text{ L}, 840\text{ mL} \\ \hline 2\text{ L}, 1,400\text{ mL} \\ = 2\text{ L} + 1\text{ L}, 400\text{ mL} \\ = 3\text{ L}, 400\text{ mL} \end{array}$$

Another Solution :

$$\begin{array}{l} 1\text{ L}, 560\text{ mL} = 1,000\text{ mL} + 560\text{ mL} = 1,560\text{ mL} \\ 1\text{ L}, 840\text{ mL} = 1,000\text{ mL} + 840\text{ mL} = 1,840\text{ mL} \\ \text{The amount} = 1,560\text{ mL} + 1,840\text{ mL} = 3,400\text{ mL} \\ = 3\text{ L}, 400\text{ mL} \end{array}$$

Notes for parents :

- Let your child explain the relation between the metric capacity units "L, mL".

Enrich your knowledge

- Changing units in the metric system is like moving from one place-value position to another.

	$\times 10$	$\times 10$	$\times 10$	$\times 10$	$\times 10$	$\times 10$	
	kilo- thousands	hecto- hundreds	deca- tens	base- ones	deci- $\frac{1}{10}$	centi- $\frac{1}{100}$	milli- $\frac{1}{1,000}$
Units of length	Kilometer km	Hectometer hm	Decameter dam	Meter m	Decimeter dm	Centimeter cm	Millimeter mm
Units of mass	Kilogram kg	Hectogram hg	Decagram dag	Gram g	Decigram dg	centigram cg	Milligram mg
Units of capacity	Kiloliter kL	Hectoliter hL	Decaliter daL	Liter L	Deciliter dL	centiliter cL	Milliliter mL
	$\div 10$	$\div 10$	$\div 10$	$\div 10$	$\div 10$	$\div 10$	$\div 10$

✓ Check your understanding

1. Complete each of the following.

a. 3 L = _____ mL

b. 9,000 mL = _____ L

c. 4 L , 265 mL = _____ mL

d. 6 L , 34 mL = _____ mL

2. Complete.

a. 3 L , 250 mL + 4 L , 750 mL = _____ L

b. 7 L , 530 mL - 3 L , 400 mL = _____ L , _____ mL

c. 9 L - 3,930 mL = _____ mL



Exercise

13

on lesson 3

Units of Capacity

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Complete.

a. The capacity of a juice can is 2 liters and 500 mL, then its capacity in milliliters

= _____ mL [El-Monofia 24]

c. 3 L = _____ mL [Aswan 23]

e. 50 L = _____ mL

g. _____ L = 6,000 mL

h. _____ L = 10,000 mL

j. _____ L = 560,000 mL

l. 19 L, 325 mL = _____ mL [El-Monofia 24]

n. 5,700 mL = _____ L, _____ mL

p. 2,222 mL = _____ L, _____ mL

r. 7,005 mL = _____ L, _____ mL [Cairo 23]

t. 4 L, 234 mL = _____ mL

v. 15,000 mL = _____ L [Alex. 24]

b. 6 L = _____ mL [Cairo 24]

d. 9 L = _____ mL

f. 2,000 mL = _____ L [Giza 24]

[Beni Suef 24] [Port Said 24]

i. _____ mL = 73 L

k. 8 L, 500 mL = _____ mL

m. 84 L, 84 mL = _____ mL

o. 5 L, 328 mL = _____ mL [El-Monofia 24]

q. _____ mL = 61 L, 254 mL

s. _____ L, _____ mL = 541,541 mL

u. _____ mL = 7 L, 400 mL

2. Find each missing number.

a.

6,360 mL	
_____ L	_____ mL

c.

_____ mL	
8 L	910 mL

[Alex. - El-Montaza 23]

b.

9,425 mL	
_____ L	_____ mL

d.

_____ mL	
2 L	250 mL

[El-Beheira - Hosh Essa 23]

3. Fill in blanks.

a. 2 L + 3 L = _____ mL

b. 8 L + 35 mL = _____ mL

[Giza 23]

c. 9 L - 3,000 mL = _____ mL

d. 8 liters - 4,000 milliliters = _____ liters

[Cairo - El-Salam 23]

e. 10 L + 1,495 mL = _____ L, _____ mL

- f. $1\text{ L}, 500\text{ mL} + 3\text{ L}, 200\text{ mL} = \text{——— mL}$
- g. $23\text{ L}, 244\text{ mL} + 2\text{ L}, 50\text{ mL} = \text{——— mL}$
- h. $13\text{ L}, 200\text{ mL} - 3\text{ L}, 100\text{ mL} = \text{——— mL}$
- i. $4\text{ L}, 540\text{ mL} - 4\text{ L}, 95\text{ mL} = \text{——— mL}$
- j. $4\text{ L}, 375\text{ mL} + 5\text{ L}, 625\text{ mL} = \text{——— L}$



4. List $6\text{ L}, 4,000\text{ mL}, 13,000\text{ mL}, 5\text{ L}$ from least to greatest.



5. Answer each of the following.



- a. Mona drank 4 liters of water. How many milliliters did she drink?

- b. A car is filled with 45 liters of petrol. How many milliliters would that be?

- c. A family drank 1 liter, 500 milliliters of orange juice at breakfast. If there were 3 liters of orange juice before breakfast, how much orange juice is left?

- d. Doha's fish tank contains 5 liters, 245 milliliters of water. If the tank can hold 10 liters of water, how much more water does she need to fill the tank?

- e. A car was filled with 20 liters, 500 milliliters of petrol. At the end of the day, there were 15 liters, 250 milliliters left in the tank. How much petrol was used?

Multiple Choice Questions

Choose the correct answer.

1. The best unit to measure the capacity of a bottle of oil is ——— [Alex. 24]
 A. meter B. liter
 C. mm D. km

2. 3 liters = ——— milliliters [Giza 23]
 A. 3 B. 30
 C. 300 D. 3,000

3. 23 liters = ——— milliliters [Kafr El-Sheikh 24]
 A. 23,000 B. 2,300
 C. 230 D. 32,000

4. 13 L, 30 mL = ——— mL [Port Said 24] [Alex. – Agamy 23] [El-Sharkia 22]
 A. 43 B. 3,013
 C. 1,330 D. 13,030

5. 5 liters, 500 mL = ——— mL [Cairo 23]
 A. 5,500 B. 5,050
 C. 550 D. 15,050

6. 10 L and 6 mL = ——— mL [El-Monofia 24]
 A. 16 B. 106
 C. 1,006 D. 10,006

7. 2 L + 55 mL = ——— mL [Alex. 24]
 A. 255 B. 2,550
 C. 2,055 D. 200,055

8. 6 L + 4,000 mL = ——— L
 A. 10 B. 46
 C. 64 D. 640

9. 7 L, 900 mL – 4 L, 400 mL = ——— L, ——— mL
 A. 3, 400 B. 2, 500 C. 2, 400 D. 3, 500

10. 29,907 mL = ——— L, ——— mL
 A. 29, 97 B. 29, 970 C. 2, 907 D. 29, 907

11. Emy drunk 3 liters, then she drunk ——— milliliters. [Cairo – El-Salam 23]
 A. 3 B. 30 C. 300 D. 3,000

12. The capacity of a juice can is 1 liter and 500 mL, then its capacity in milliliters = ——— mL [Giza – Abo El-Nomros 23] [El-Sharkia – Abo Kebeer 22]
 A. 150 B. 1,500 C. 15,000 D. 1,005

CONCEPT 2

Measuring Time



► Lessons 4&5

Units of Time

Elapsed Time

Learning Objectives:

- Students will tell time to the minute.
- Students will explain relationships between units of time.
- Students will explain elapsed time.
- Students will solve elapsed time problems.
- Students will explain the strategies they use to solve elapsed time problems.

► Lesson 6

Applications of Measurement 1

Learning Objectives:

- Students will add and subtract to solve problems.
- Students will solve story problems involving measurement.
- Students will apply a variety of strategies to solve story problems.

► Lesson 7

Applications of Measurement 2

Learning Objectives:

- Students will multiply and divide to solve problems.
- Students will solve story problems involving measurement.
- Students will apply a variety of strategies to solve story problems.

Fast Fact

The first pocket watch was invented in the 1500's by Peter Henlein. It only had an hour hand.

The minute hand was added in the late 1600's.

Lessons 4 & 5

► Units of Time ► Elapsed Time

Learn 1 What time is it ?

This morning, Amgad's family will take a ride on the railroad. The train leaves at 11 o'clock.

Amgad's family is in the station waiting room. The time right now is shown on the clock



Has Amgad's family missed the train ?

The time on the clock is 10:50 or 10 to 11.

So, Amgad's family has not missed the train.



Example 1

Write the time shown on the clock in two different ways.

a.



b.



c.



d.



Solution

a. It is 2 o'clock , 2 : 00

b. It is half past 1 , 1 : 30

c. It is 5 to 8 , 7 : 55

d. It is quarter past 9 , 9 : 15

Notes for parents :

- Ask your child to count from 7:00 to 8:00 using 5-minutes intervals (7:00 , 7:05 , 7:10 , and so on).

Units of Measuring Time

- Week, day, hour, minute, second, these units are used to measure time.

$$1 \text{ week} = 7 \text{ days}$$

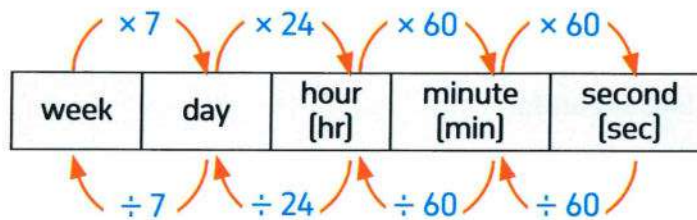
$$1 \text{ day} = 24 \text{ hours (hr)}$$

$$1 \text{ hour} = 60 \text{ minutes (min)}$$

$$1 \text{ minute} = 60 \text{ seconds (sec)}$$

Converting Time Units

First Using multiplication :



Second Using repeated addition (Pattern) :

$$1 \text{ week} = 7 \text{ days}$$

Week	1	2	3	4	...
Day	7	14	21	28	...

Diagram showing repeated addition of 7 days to get the number of days for each week. A blue arrow points from the 'Day' row to the 'Week' row with a multiplier of $\times 7$.

$$1 \text{ day} = 24 \text{ hours}$$

Day	1	2	3	4	...
Hour	24	48	72	96	...

Diagram showing repeated addition of 24 hours to get the number of hours for each day. A blue arrow points from the 'Hour' row to the 'Day' row with a multiplier of $\times 24$.

$$1 \text{ hour} = 60 \text{ minutes}$$

Hour	1	2	3	4	...
Minute	60	120	180	240	...

Diagram showing repeated addition of 60 minutes to get the number of minutes for each hour. A blue arrow points from the 'Minute' row to the 'Hour' row with a multiplier of $\times 60$.

$$1 \text{ minute} = 60 \text{ seconds}$$

Minute	1	2	3	4	...
Second	60	120	180	240	...

Diagram showing repeated addition of 60 seconds to get the number of seconds for each minute. A blue arrow points from the 'Second' row to the 'Minute' row with a multiplier of $\times 60$.

Example 2

Complete.

a. 6 weeks = _____ days

c. 5 days = _____ hours

e. 9 minutes = _____ seconds

b. 13 weeks = _____ days

d. 8 hours = _____ minutes

f. 75 minutes = _____ hours, _____ minutes

- Ask your child how many hours there are in a week.

Solution

- a. You can use multiplication : 6 weeks = $6 \times 7 = 42$ days.
or You can use repeated addition : 6 weeks = $7 + 7 + 7 + 7 + 7 + 7 = 42$ days.

- b. 13 weeks = $13 \times 7 = 7 \times [10 + 3]$ "Distributive property of multiplying"

$$\begin{array}{c} 10 \quad 3 \\ \times \quad \times \\ \hline \end{array} = [7 \times 10] + [7 \times 3] = 70 + 21 = 91 \text{ days.}$$

- c. 5 days = $5 \times 24 = 5 \times [20 + 4]$ "Distributive property of multiplying"

$$\begin{array}{c} 20 \quad 4 \\ \times \quad \times \\ \hline \end{array} = [5 \times 20] + [5 \times 4] = 100 + 20 = 120 \text{ hours.}$$

- d. 8 hours = $8 \times 60 = 480$ minutes.

- e. 9 minutes = $9 \times 60 = 540$ seconds.

- f. 75 minutes = 60 minutes + 15 minutes
= 1 hour , 15 minutes

Note for (f)

$$\begin{array}{r} 75 \text{ min} \\ - 60 \text{ min} \\ \hline 15 \text{ min} \end{array}$$

Note

You can use different strategies to convert units.

Example 3

Find the missing numbers.

- a. 4 weeks , 2 days = _____ days. b. 5 days , 5 hours = _____ hours.
c. 3 hours , 20 minutes = _____ minutes. d. 2 minutes , 30 seconds = _____ seconds.

Solution

- a. 4 weeks = $4 \times 7 = 28$ days.

So, 4 weeks , 2 days = 28 days + 2 days
= **30** days.

- b. 5 days = $5 \times 24 = 5 \times [20 + 4]$

$$= 100 + 20 = 120 \text{ hours}$$

So, 5 days , 5 hours = 120 hours + 5 hours
= **125** hours.

- c. 3 hours = $3 \times 60 = 180$ minutes.

So, 3 hours , 20 minutes
= 180 minutes + 20 minutes = **200** minutes.

- d. 2 minutes = $2 \times 60 = 120$ seconds

So, 2 minutes , 30 seconds
= 120 seconds + 30 seconds = **150** seconds.

Check your understanding

Fill in the blanks.

- a. 5 hours , 10 minutes = _____ minutes. b. 3 days , 10 hours = _____ hours.
c. 4 minutes , 11 seconds = _____ seconds. d. 2 weeks , 2 days = _____ days.

Notes for parents :

- Remind your child the distributive property of multiplying.
- Remind your child how to multiply by multiples of 10.

Learn 2 Elapsed time

Elapsed time is the time that passes from the start to the end of an activity.

Example 4

Laila entered a shopping mall, spent 2 hours , 40 minutes shopping , and spent 50 minutes at lunch in a restaurant, and then left the mall. How long did Laila spend in the mall ?

Solution

There are different ways to calculate the elapsed time.

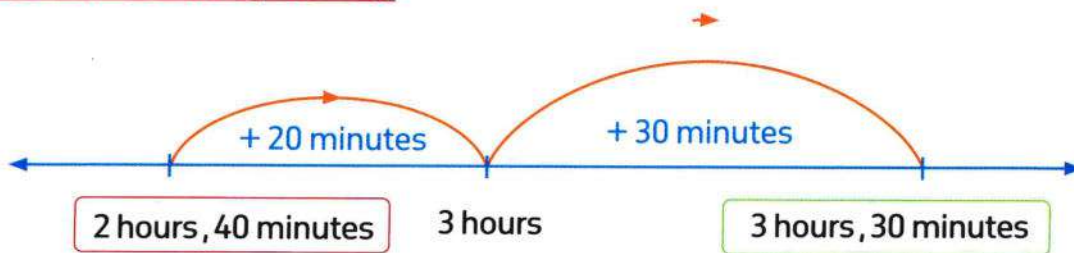
1. Add Times

Hours	:	Minutes	
2	:	40	
+	:	50	
2	:	90	[Rename 90 minutes as 1 hour , 30 minutes] 60 minutes = 1 hour

So, 2 hours + 1 hour + 30 minutes = 3 hours , 30 minutes



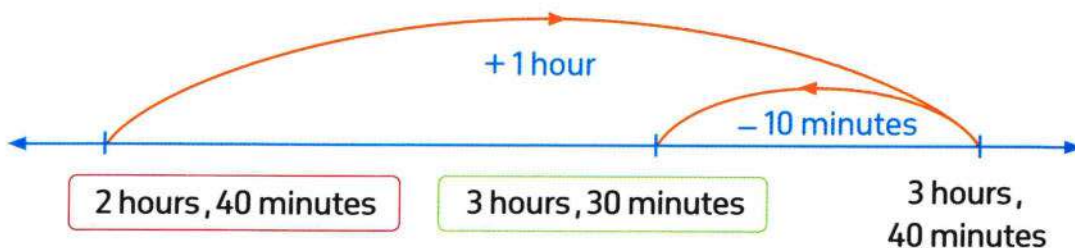
2. Using a Time Line by Adding



3. Using a Time Line by Subtracting

Hint

50 minutes = 1 hour - 10 minutes



• Help your child find the elapsed time using different ways.

4. Convert Units

[**Think**: 1 hour = 60 minutes]

So, 2 hours = $2 \times 60 = 120$ minutes.

Then 2 hours, 40 minutes + 50 minutes
= 120 minutes + 40 minutes + 50 minutes
= 210 minutes

Then, 210 minutes = 180 minutes + 30 minutes
= **3 hours, 30 minutes**

Math tip

$$\begin{array}{r}
 210 \\
 - 60 \rightarrow \text{one hour} \\
 \hline
 150 \\
 - 60 \rightarrow \text{one hour} \\
 \hline
 90 \\
 - 60 \rightarrow \text{one hour} \\
 \hline
 30 \\
 \hline
 210 \text{ minutes} = \boxed{3 \text{ hours}}, \boxed{30 \text{ minutes}}
 \end{array}$$

Example 5

Yasser finds that a cinema show is full when he arrives at 7:50 A.M. next show begins at 9:30 A.M.
How long will he have to wait for the next show?

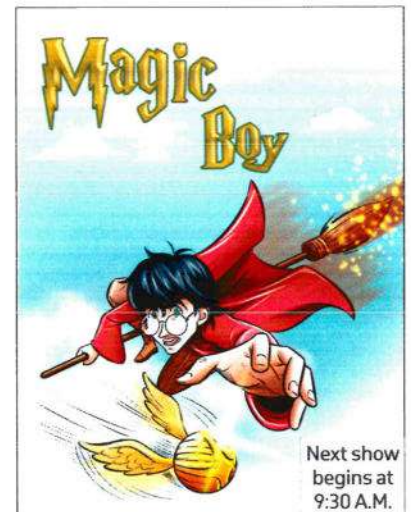
Solution 

There are different ways to calculate the elapsed time.

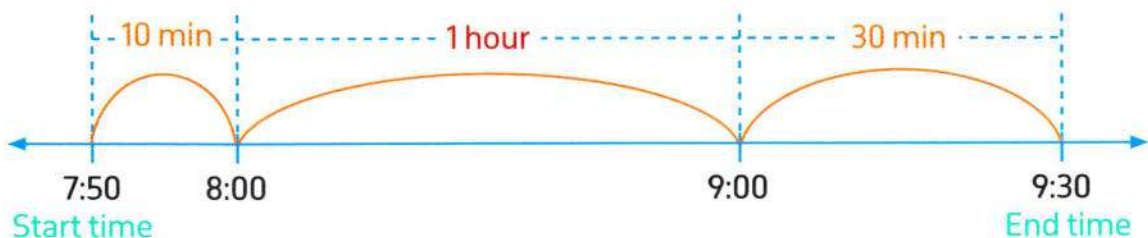
1. Subtract Times

Hours	:	Minutes
8	:	90
9	:	30
+ 60		
- 7	:	50
1	:	40

So, he will wait 1 hour, 40 minutes for the next show.



2. Using a Time Line



So, he will wait 1 hour, 40 minutes for the next show.

Example 6

Bassem left school at 2:30 P.M. and arrived home 35 minutes later.

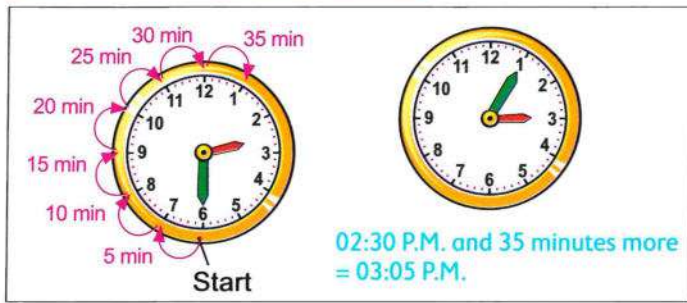
What time did Bassem arrive home?

Notes for parents :

- Ask your child what time will be 2 hours after 11:35 A.M.

Solution

1. Count Forward on a Clock

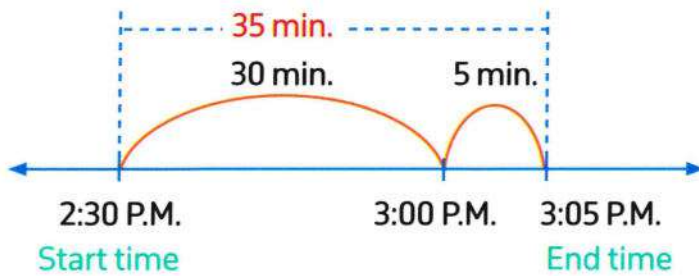


Math tip

When counting forward on a clock, increase one hour for each cross on 12.

So, Bassem arrived home at 3 : 05 P.M.

2. Using a Time Line



So, Bassem arrived home at 3 : 05 P.M.

Example 7

Calculate.

- a. $3:15 + 6:20 =$ b. $5:37 + 50 \text{ minutes} =$ c. $7:35 - 40 \text{ minutes} =$

Solution

a.

	Hours	:	Minutes
	3	:	15
+	6	:	20
	9	:	35

Another Solution

Hours Minutes

$$3:15 + 6:20 = [3 + 6] : [15 + 20]$$

Minutes

$$= 9:35$$

You can use different ways to calculate each one.



b.

	Hours	:	Minutes
	5	:	37
+		:	50
	5	:	87
	6	:	27

$87 \text{ min} = 60 \text{ min} + 27 \text{ min}$
 $= 1 \text{ hr} + 27 \text{ min}$

c.

	Hours	Minutes
	6	95
	7	35
-		40
	6	55

Check your understanding

Peter completed a bike ride 3 hours and 26 minutes after he started. He started the bike ride at 8 : 15 A.M. At what time did he finish ?

- Ask your child how many hours and minutes pass from the time he/she leaves for school until he/she returns home.

Exercise

14

on lessons 4&5

► Units of Time

► Elapsed Time

● REMEMBER

● UNDERSTAND

● APPLY

● PROBLEM SOLVING

From the school book

1. Write the time.

a.



_____ : _____

b.



_____ : _____

c.



_____ : _____

2. Write the time in two ways.

a.



_____ : _____

It's _____

b.



_____ : _____

It's _____

c.



_____ : _____

It's _____

3. Complete each of the following tables.

a.

Minute	1	2	3	4	5	6	7	8	9	10
Second	60									

b.

Hour	1	2	3	4	5	6	7	8	9	10
Minute	60									

c.

Day	1	2	3	4	5	6	7	8	9	10
Hour	24									

d.

Week	1	2	3	4	5	6	7	8	9	10
Day	7									

4. Complete.

- a. 5 weeks = _____ days. [Giza 23]
- b. 2 hours = _____ minutes. [Ismailia 24] [Giza 23]
- c. 10 days = _____ hours. [Kalyoubia 23]
- d. 4 weeks = _____ days. [Alex. 23]
- e. 5 minutes = _____ seconds. [Behiera 23]
- f. 3 hours = _____ minutes. [Monofia – Sadat City 23]
- g. 2 minutes = _____ seconds.
- h. 25 days = _____ weeks, _____ days.
- i. 130 minutes = _____ hours, _____ minutes.
- j. 50 hours = _____ days, _____ hours.

5. Solve the conversion problems.

- a.  10 hours , 30 minutes = _____ minutes. [Aswan 23]
- b. A week , 3 days = _____ days. [Alex. 24]
- c. Two weeks and 3 days = _____ days. [Cairo 24]
- d. 1 day and 5 hours = _____ hours. [El-Monofia 24] [El-Menia 24]
- e.  4 days , 20 hours = _____ hours. [Aswan 23]
- f. 2 days , 12 hours = _____ hours. [Cairo – El-Shrouk 23]
- g. 10 hours , 30 minutes = _____ minutes. [El-Monofia 24] [Port Said 24]
- h. 2 hours , 10 minutes = _____ minutes. [Souhag 23]
- i. 4 minutes , 20 seconds = _____ seconds. [El-Gharbia – Samanoud 22]
- j.  6 minutes , 15 seconds = _____ seconds.

6. Compute the time.

- | | |
|--|---|
| a.  3 : 25 + 45 minutes = _____ | b.  3 : 25 + 1 : 26 = _____ |
| c. 10 : 20 – 7 : 00 = _____ | d. 7 : 51 – 3 : 35 = _____ |
| e. 3 : 15 + 2 : 50 = ____ : ____ [Ismailia 23] | f. 2 : 45 + 6 : 17 = _____ |
| g. 3 : 07 – 42 min = _____ | h.  5 : 43 – 1 : 25 = _____ [Aswan 23] |
- i. Ali started doing his homework at 5 : 15 pm, he took 40 minutes to finish it. So , he finished at _____ pm. [Alex. 24]

7. Find the elapsed time.

a. Start : 1 : 20 P.M.
End : 9 : 50 P.M.

b. Start : 6 : 40 A.M.
End : 10 : 17 A.M.

c. Start : 4 : 27 P.M.
End : 8 : 00 P.M.

d. From : 6 : 43 A.M.
To : 9 : 43 A.M.

e. From : 6 : 15 A.M.
To : noon

f. From : 11 : 40 A.M.
To : 1 : 20 P.M.

Story problems on measuring time

8. Answer the following.

- a.  It takes Dalia 2 hours and 15 minutes to drive to her grandmother's house.
How many minutes does the drive take ?

- b.  An average ant works for 19 hours a day. How many hours does an ant work in 3 days ?

- c. Amir's family used their computer for 3 hours on Saturday, 4 hours on Sunday and 5 hours on Monday. How many total minutes were they on the computer ?

- d.  A worker ant takes 240 naps a day. Each nap lasts 1 minute.
About how many hours did the ant nap ?

Story problems on elapsed time

9. Answer the following.

- a. Mona's birthday party started at 7 : 00 in the evening. It took around 2 hours and 40 minutes for the party to get over. What is the time at which the party got over ?

- b.  Farah was training for a marathon. Her goal was to run for 1 hour and 30 minutes. If she started running at 8:35 A.M. , what time did she finish running ?

- c. The train was scheduled to arrive at 5 : 10 P.M. However, it was delayed for 57 minutes. What time was it when the train arrived ?

- d. The game started at 7 : 50 P.M. It ended at 10 : 05 P.M. How long was the game ?

- e. Paula starts to do his school homework at 3 : 30 P.M. He spends 45 minutes in doing his math homework and 25 minutes in doing his science homework. What is the time at which he finished both homeworks ?

- f. 📖 Jana and Maha have 5 hours to watch three movies that last 1 hour and 22 minutes , 2 hours and 12 minutes and 1 hour and 57 minutes.

1. Do the girls have enough time to watch all three movies ? How do you know ?

2. The girls decide to just watch the two shortest movies. If they start watching them at 5 : 30 P.M., what time will their movies end ?

- g. 🐜 A worker ant went out to find food for the colony. It left at 6 : 30 A.M. and returned at 7 : 42 A.M. How long was that ant looking for food ?





Multiple Choice Questions

Choose the correct answer.

- | | |
|---|--|
| <p>1. 2 hours = _____ minutes
[El-Menia 24] [Alex. - Al-Agamy 23]</p> <p>A. 24 B. 60
C. 120 D. 360</p> | <p>2. 5 minutes and 10 seconds
= _____ seconds [El-Beheira 24]</p> <p>A. 15 B. 50
C. 310 D. 130</p> |
| <p>3. 5 weeks, 5 days = _____ days.
[Cairo - Rod El-Farag 23]</p> <p>A. 10 B. 25
C. 40 D. 50</p> | <p>4. 2 days and 2 hours = _____ hours.
[Port Said 24] [Giza - Awseem 23]</p> <p>A. 22 B. 4
C. 62 D. 50</p> |
| <p>5. 1 day and 5 hours = _____ hours.
[Beni Suef 24] [Souhag 22]</p> <p>A. 29 B. 65
C. 15 D. 35</p> | <p>6. 4 hours, 10 minutes = _____ minutes.
[Cairo 24]</p> <p>A. 14 B. 200
C. 240 D. 250</p> |
| <p>7. 2 : 50 + 40 minutes = _____
A. 2 : 10 B. 3 : 10
C. 2 : 54 D. 3 : 30</p> | <p>8. 6 : 43 – 50 minutes = _____
A. 6 : 53 B. 5 : 07
C. 5 : 53 D. 6 : 07</p> |
| <p>9. The time now is 02 : 35, after ten minutes the time will be _____ [Giza 24]</p> <p>A. 11 : 35
B. 02 : 50
C. 02 : 45</p> | <p>10. The duration of a film show is 2 hr, 15 min. It starts at 3 : 30 p.m., when will it end ?
[El-Monofia 24]</p> <p>A. 5 : 45 p.m. B. 8 : 34 p.m.
C. 5 : 30 p.m. D. 5 : 54 p.m.</p> |
| <p>11. Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes, we _____ [Beni Suef 22]</p> <p>A. add 6 with 60 B. add 6 with 24
C. multiply 6 by 60 D. multiply 6 by 24</p> | <p>12. Fatima started cooking at 6:15 P.M. for 50 minutes, so, she finished at _____ P.M. [Giza - Abo El-Nomros 23]</p> <p>A. 6 : 53 B. 6 : 55
C. 7 : 00 D. 7 : 05</p> |

Lesson 6

Applications of Measurement 1 [Addition and Subtraction]

Problem

Ali and Giovanni each caught a fish.

The two fish have

a mass 8,250 g

The mass of Giovanni's fish

is 3 kg, 530 g

What is the mass of Ali's fish ?



Understand

- What are you asked to find ?
- What information will you use ?
- Is there any information you will not use ? If so, what ?



Plan

- What strategies can you use to solve the problem ?
 - *Convert measurement units first.*
 - *Use subtraction standard algorithm.*



Solve

- How can you use the strategy to solve the problem ?

The mass of Giovanni's fish = 3 kg, 530 g (**Think** : 1 kg = 1,000 g)
= 3,530 g

The mass of Ali's fish = $8,250 - 3,530$
= 4,720 g
= 4 kg, 720 g



Check

- What other strategy could you use ?

Notes for parents :

- In this lesson, your child will use addition and subtraction to solve multistep story problems involving length, mass, capacity, and time.

Example 1

Abeer purchased 7 kilograms of sugar,
10 kilograms of flour, 500 grams of cocoa,
275 grams of pecans, and 225 grams of coconut.

**What is the total mass of her groceries
in kilograms?**

Solution

$$\begin{aligned}
 \text{The total mass} &= 7 \text{ kg} + 10 \text{ kg} + 500 \text{ g} + 275 \text{ g} + 225 \text{ g} \\
 &= [7 + 10] \text{ kg} + [500 + 275 + 225] \text{ g} \\
 &= 17 \text{ kg} \quad + \quad [775 + 225] \text{ g} \\
 &= 17 \text{ kg} \quad + \quad 1,000 \text{ g} \\
 &= 17 \text{ kg} \quad + \quad 1 \text{ kg} \\
 &= 18 \text{ kg}
 \end{aligned}$$

Strategies

- Estimate
- Use smaller numbers
- Draw a picture of model (number line, bar model, diagram, and so on)
- Write an equation with the unknown
- Use the standard algorithm
- Find a hidden question
- Convert measurement units first
- Make a benchmark number

[Associative property]

[Convert measurement units]

Example 2

A tailor used 1 m, 35 cm of cloth to make a shirt and 2 m, 15 cm to make trousers.

What is the total length of cloth used by the tailor to make a shirt and trousers?

Solution

$$\begin{aligned}
 \text{The total length} &= 1 \text{ m} + 35 \text{ cm} + 2 \text{ m} + 15 \text{ cm} \\
 &= [1 + 2] \text{ m} + [35 + 15] \text{ cm} \\
 &\quad \text{[Commutative and associative]} \\
 &= 3 \text{ m} + 50 \text{ cm} \\
 &= 3 \text{ m and } 50 \text{ cm} = 350 \text{ cm}
 \end{aligned}$$

Another strategy

- Convert measurement units first
 $1 \text{ m}, 35 \text{ cm} = 135 \text{ cm}$
 $2 \text{ m}, 15 \text{ cm} = 215 \text{ cm}$
 The total length = $135 + 215$
- Use Break up and Bridge strategy
 $135 = 100 + 30 + 5$
 $215 = 200 + 10 + 5$
 $300 + 40 + 10 = 350 \text{ cm}$

• Ask your child what strategy he/she decided to use, and why he/she chose it.

Example 3

A fish tank with a capacity of 92 liters is filled with 23,000 milliliters of water.
How many more liters of water are needed to fill it up completely?

Solution

Convert measurement units first.

23,000 mL = 23 L [Think: 1,000 mL = 1 L]

Number of liters needed to fill up the tank

$$\begin{array}{r} 8 \ 12 \\ 92 \text{ L} - 23 \text{ L} \end{array}$$

$$= 69 \text{ L} \quad \text{[Standard subtraction algorithm]}$$

Another way to subtract $92 - 23$

Add to subtract strategy

$$23 + 7 = 30$$

$$30 + 60 = 90$$

$$90 + 2 = 92$$

$$\text{So, } 7 + 60 + 2 = 69$$

$$\text{Then } 92 - 23 = 69$$

Example 4

Ahmed studied from 3 : 15 – 4 : 45. His sister, Sarah studied from 4 : 30 – 6 : 15

Who studied longer and by how much?

Solution

Ahmed	hr.	min.
	4	45
	– 3	15
	1	30

The time of Ahmed = 1 hr. and 30 min.
= 60 + 30 = 90 min.

Sarah	hr.	min.
	5 6	15 75 [60 + 15]
	– 4	30
	1	45

The time of Sarah = 1 hr. and 45 min.
= 60 + 45 = 105 min.

So, Sarah studied longer than Ahmed and the difference = 105 – 90 = 15 min.

Check your understanding

- Two wooden planks of lengths 12 m, 60 cm and 18 m, 63 cm are glued together to make a long wooden bridge. What is the total length of the bridge?

- Ashraf purchased 7 kg, 200 g of sugar, 9 kg, 395 g of rice. What is the total mass which Ashraf purchased?

Notes for parents :

- Ask your child to use different strategies to solve the problems.

Exercise 15

on lesson 6

Applications of Measurement 1 [Addition and Subtraction]

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

First : Problems involving length

1. One box is 44 cm, 5 mm tall. Another box is 35 cm. tall. How tall will the boxes be if both are stocked one on top of the other ?

Strategies

- Estimate
- Use smaller numbers
- Draw a picture of model (number line, bar model, diagram, and so on)
- Write an equation with the unknown
- Use the standard algorithm
- Find a hidden question
- Convert measurement units first
- Make a benchmark number

2. Sameh has 63 m of ribbon. If he cuts 56 m, 21 cm ribbon from it, what length of ribbon will be left ?

3. Rania is measuring two ant lines. Colony A's ant line is 30 centimeters long, and Colony B's ant line is 500 millimeters long. How many centimeters long are the two ant lines together ?

4. An ant from Colony A walked 2 kilometers in a day. An ant from Colony B walked 3,000 meters in a day. Which ant walked the farthest and how much farther in kilometers did it walk ?

5. Taher grew 10 centimeters in 1 year. He is now 1 meter, 6 centimeters tall. How many centimeters tall was Taher 1 year ago ?

Second : Problems involving mass

6. Adam bought 5 kg of milk and 200 g. Re-write this weight in grams. [Cairo 24]

7.  Zeina purchased 8 kilograms of sugar, 10 kilograms of flour, 500 grams of cocoa, 225 grams of pecans, and 275 grams of coconut. What is the total mass of her groceries in kilograms ?

8.  In Colony A, the ants collect 950 grams of food. If they consume 25 grams of food on Monday and 37 grams of food on Tuesday, how many grams of food are left ?

9.  The potatoes Aya bought weight 2 kilograms, 920 grams. Her onions weighed 1,075 grams less than the potatoes. How much did the potatoes and onions weight together ?

10.  Ali's cat weighs 7 kilograms and his dog weighs 17 kilograms. When Ali took them to the vet, he learned that his cat gained 450 grams and his dog gained 120 grams. How much do his two pets weigh in all now ?

Third : Problems involving capacity

11.  A fish tank with a capacity of 100 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely ?

12.  A milkman sold 46 L, 200 mL of milk on 3 days of a week and 53 L, 195 mL of milk in the next 2 days. What quantity of milk did he sell in the 5 days ?

13. 📖 Mr. Emad bought four 2-liter bottles of soda for the Primary 4 picnic. If there were 2 liters and 829 milliliters of soda remaining at the end of the picnic, how many milliliters of soda did the students drink ?
-

Fourth : Problems involving time

14. A bus leaves for Cairo at 4 : 30 P.M. It takes 1 hr, 25 min. to reach there. At what time will it reach at Cairo ?
-
15. The duration of a film show is 3 hr, 15 min. It starts at 6 : 30 P.M. When will it end ?
-
16. 📖 A pharaoh ant grows from egg to adult in 45 days. A carpenter ant grows from egg to adult in 12 weeks. Which species takes longer to grow from egg to adult ? How much longer ?
-
17. 📖 Worker ants take power naps totaling up to 250 minutes a day. A queen ant may sleep up to 9 hours a day. Which ant sleeps longer and by how many minutes ?
-

Challenge

18. Amal has a rope of length 40 m. She gave 12 m, 53 cm to Amgad, 18 m, 35 cm to Bassem and 9 m, 7 cm to Ayman. What length of rope is still left with Amal ?
-



Multiple Choice Questions

Choose the correct answer.

1. Shaimaa poured 5 L of water into a beaker. During an experiment, she added 200 mL of water.

How much water was in the beaker at the end of the experiment ?

- A. 205 mL B. 2,500 mL
C. 4,800 mL D. 5,200 mL

2. Bassem bought 3 meters of rope. He then cut off 170 centimeters of rope to glue around the edge of a pot. How many centimeters of rope does Bassem have left ?

- A. 173 B. 470
C. 130 D. 167

3. Hany ran 1,800 meters on Saturday and 3 km, 200 m on Sunday. How many meters did he run in all ?

- A. 5 B. 1,400
C. 4,000 D. 5,000

4. A box contains 2 bags of sugar. If the mass of each one is 1 kg and 300 g, what is the total mass in grams ?

- A. 600 B. 2,600
C. 2,800 D. 1,300

5. If Vector studied from 4 : 10 to 5 : 00, then he studied _____ minutes.

- A. 60 B. 110
C. 40 D. 50

6. Peter is over weight. He is 105 kg. If his aim is to lose 500 g per week, then Peter's mass after 2 weeks is _____ kg.

- A. 104 B. 105
C. 106 D. 107

7. Mr. Bassem bought 3 cartons of juice which are 2 liters each. If his three children finished 4,700 milliliters, then the left of juice is _____ mL

- A. 2,300 B. 2,700 C. 300 D. 1,300



Lesson 7

Applications of Measurement 2 [Multiplication and Division]

Example 1

Wael has a 20 meter-long piece of wood. He wants to cut it into 4 equal lengths. **How long should each cut piece be in meters ?**

How long will each of these pieces be in centimeters ?

Solution 

- The length of each piece in meters = $20 \div 4 = 5$ m [**Think** : $4 \times 5 = 20$]
- The length of each piece in centimeters = 5×100
 $= 500$ cm [**Think** : 1 m = 100 cm]

Example 2

A cow gives 22 L and 500 mL of milk daily.
If the milkman has 10 cows , **how much milk does he got in liters in a day ?**

And if the daily milk is filled in bottles of capacity 1,000 mL ,
how many bottles will be required ?



Solution 

- 22 L , 500 mL = 22,500 mL
- The milk from 10 cows in mL = $22,500 \times 10 = 225,000$ mL
The milk from 10 cows in L = $225,000 \div 1,000 = 225$ L
- The capacity of one bottle is 1,000 mL = 1 L
Then the milkman needs 225 bottles.

Notes for parents :

- In this lesson, your child use multiplication and division to solve multistep story problems involving length, mass, capacity, and time.

Example 3

A box can carry a total mass of 10 kg. Laptops have to be packed inside the box.

If the mass of each laptop is 2,000 g, **how many laptops can be packed inside the box?**

Solution 

- The mass of each laptop = 2,000 g = 2 kg [**Think** : 1,000 g = 1 kg]
- The number of laptops can be packed inside the box = $10 \div 2 = 5$ laptops

Example 4

Mona is stringing beads to make a necklace. She is using 30 of the 8 mm beads, 70 of the 4 mm beads, and 40 of the 2 mm beads. **How long will her finished necklace be in cm?**

Solution 

$$30 \text{ of } 8 \text{ mm} = 30 \times 8 = 240 \text{ mm}$$

$$, 70 \text{ of } 4 \text{ mm} = 70 \times 4 = 280 \text{ mm}$$

$$\text{and } 40 \text{ of } 2 \text{ mm} = 40 \times 2 = 80 \text{ mm}$$

$$\text{So, the length of her finished necklace} = 240 + 280 + 80 = 600 \text{ mm} = 600 \div 10 = 60 \text{ cm}$$

Example 5

Salwa is a runner. She spends half an hour every day running.

How many minutes in total does she run for during a 9-day period?

Solution 

What she runs each day = Half an hour = 30 min.

What she runs for during a 9-day period = $30 \times 9 = 270$ min.

 Check your understanding

In a relay race, 4 people ran 3,000 meters each. In a distance race, John ran 15 kilometers.

Who ran farther, the whole relay team or John? How much farther?

Notes for parents :

- Tell your child that multistep problem needs to know what information do you have to help you solve the problem.
- Help your child read and understand to figure out the problem and use the information to decide which operation to use.

Exercise

16

on lesson 7

Applications of Measurement 2 [Multiplication and Division]

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

First : Problems involving length

1. Ants walk about 5,000 meters each day.

How many meter do ants walk in 5 days?

[El – Menia 24]

2. A runner covers 750 meters in an hour. Calculate the distance he covers in 5 hours. [Alex. 24]

3. Ahmed has a 12 meter-long piece of wood. He wants to cut it into 3 equal lengths.

How long should each cut piece be in meters ? How long will each of these pieces be in centimeters ?

4. Sara travelled 9 days continuously. She travelled 5,000 meters each day.

How many kilometers did she walk in all ?

Second : Problems involving mass

5. If the mass of a box is 320 kg, then find the mass of 4 boxes with the same mass. [Alex. 24]

6. Ehab is a weightlifter. He has a mass of 100 kilograms. His aim is to gain 500 grams per week. If he does that for 5 weeks, what will his mass be at the end ?

7. Mariam was having a picnic with her family and counted 10 ants walking by. If each ant weighed 1 gram and carried 50 times its body weight , how much weight was being carried in all ?

Third : Problems involving capacity

8. A water purifier cleans 10 L , 50 mL of water each day. How much water will be cleaned by the cleaner in 10 days ?

9.  Ayman is a runner. While Ayman is in training , he needs to drink 500 milliliters of water 4 times per day. How many liters of water will that be for 1 week ?

10. Mostafa has 32 liter bottles of soda. If he divides the soda equally between himself and his 7 friends, how much soda will each person have ?

Fourth : Problems involving time

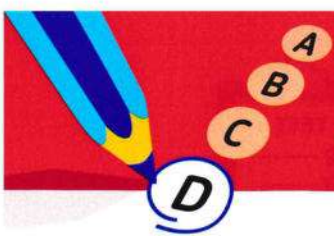
11. Hossam sleeps 8 hours each day. How many hours did he sleep in 5 days ? [Giza 24]

12. An ant works for 19 hours a day. How many hours does an ant work in 3 days ? [Kafr El-Sheikh 24] [Luxor 24]

13.  Amany is a swimmer. She spends half an hour every day swimming. How many minutes in total does she swim for during a 5-day period ? [Aswan 23]

 Challenge

14.  An ant is at the bottom of a 20-meter deep well and is trying to get to the top. Each day it climbs 4 meters up, but each night it slides back 2 meters. How many days does it take for it to get out of the well ?



Multiple Choice Questions

Choose the correct answer.

1. Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes ,
we _____

[Giza - Awseem 23]

- A. add 6 with 60
B. add 6 with 24
C. multiply 6 by 60
D. multiply 6 by 24

2. A building is 20 meters tall. A bridge is 5 meters tall. How many times the building is taller than the bridge ?

[Alex. - Al-Agamy 23]

- A. 3
B. 4
C. 15
D. 10

3. Sami has 25 meter-long piece of cloth. If he wants to cut it into 5 equal pieces, the length of each one equals _____

- A. 4 m
B. 5 m
C. 50 cm
D. 125 cm

4. If Mina travelled 10 days continuously. He travelled 4,000 meters each day, then he walk in all about _____ kilometers.

- A. 4
B. 40
C. 400
D. 4,000

5. If Mohamed rides his cycle 10 km per day , then he covers _____ in 5 days.

- A. 2 km
B. 5 km
C. 5,000 m
D. 50 km

6. If the total mass of 10 balls having same mass is 130,000 grams, then the mass of each ball is _____ kg.

- A. 130
B. 1300
C. 13
D. 13,000

7. If ants walk about 3,000 meters each day , then the ants walk _____ km in 5 days.

- A. 3
B. 150
C. 15,000
D. 15

8. An ant walks up to 2 km per day. If the ant continues this for 10 days, then the ant will walk about _____ meters.

- A. 200
B. 2,000
C. 20,000
D. 200,000

Unit Three Assessment



1. Choose the correct answer.

1. $5 \text{ kg} = 5,000$ _____
A. m B. day C. g D. L
2. $6 \text{ m} + 25 \text{ cm} =$ _____ cm [Cairo 24]
A. 6,025 B. 625 C. 6,205 D. 652
3. $7 \text{ liters and } 600 \text{ mL} =$ _____ mL [EL-Monofia 24]
A. 76 B. 760 C. 7,600 D. 70,600
4. $1 \text{ day and } 6 \text{ hours} =$ _____ hours [Cairo 23]
A. 7 B. 30 C. 66 D. 36
5. $5,050 \text{ mL} =$ _____ L , 50 mL
A. 5 B. 50 C. 500 D. 5,000
6. $2 \text{ kg}, 250 \text{ g} + 3 \text{ kg}, 750 \text{ g} =$ _____ kg [Giza 24]
A. 5 B. 6 C. 7 D. 8
7. The elapsed time from 3 : 50 A.M. to 7 : 00 A.M. is _____
A. 3 hr , 50 min B. 3 hr , 10 min
C. 4 hr , 10 min D. 4 hr , 50 min

2. Complete each of the following.

1. 5 Weeks = _____ days [Kafr EL-Sheikh 24]
2. $9,000 \text{ mL} =$ _____ liters [Port Said 24] [Souhag 23]
3. $15,423 \text{ m} =$ _____ km, _____ m [EL-Monofia 24]
4. $35 \text{ kg}, 76 \text{ g} =$ _____ g [Kafr EL-Sheikh 24]
5. $31,310 \text{ g} =$ _____ kg , _____ g
6. $8 \text{ meters}, 45 \text{ cm} =$ _____ cm [EL-Monofia - Berket EL-Sabaa 23]
7. $8 : 25 + 35 \text{ minutes} =$ _____
8. $6 : 34 - 1 : 25 =$ _____



3. Choose the correct answer.

1. 5 L , 13 mL = _____ mL

A. 513

B. 5,013

C. 50,013

D. 500,013

[El-Monofia – Quesna 23]

2. 6 minutes and 30 seconds = _____ seconds

A. 630

B. 390

C. 330

D. 306

[Cairo – El-Marg 23]

3. _____ kilometers and 45 meters = 5,045 meters

A. 5

B. 545

C. 45

D. 4,055

[Giza 24]

4. 6 liters = _____ mL

A. 6,000

B. 600

C. 60

D. 60,000

[Cairo 23]

5. 5 m = _____ cm

A. 5

B. 50

C. 500

D. 5,000

[El-Beheira – Hosh Essa 23]

6. 1 week and 3 days = _____ days

A. 7

B. 8

C. 9

D. 10

[Giza 23]

7. 17 tons ☐ 7,000 kg

A. >

B. =

C. <

D. otherwise

4. Answer the following.

1. A fizzy can of mass 300 g , Jana bought 6 cans.

What is the total mass of cans in kilograms and grams ?

2. Sarah purchased 3 kg , 400 g of sugar and 5 kg , 217 g of rice. What is the total mass which Sarah carried ?

3. 10 books of height 8 cm , 5 mm each are stacked over one another. What is the total height so obtained ?

4. Find each missing number.

a.

_____ mL
9 L 450 mL

c.

7,005 g
_____ kg _____ g

b.

10,100 m
_____ km _____ m

d.

7,500 kg
_____ ton _____ kg



THEME ONE

Number Sense and Operations

UNIT 4

Area and Perimeter

► **Concept 1:**

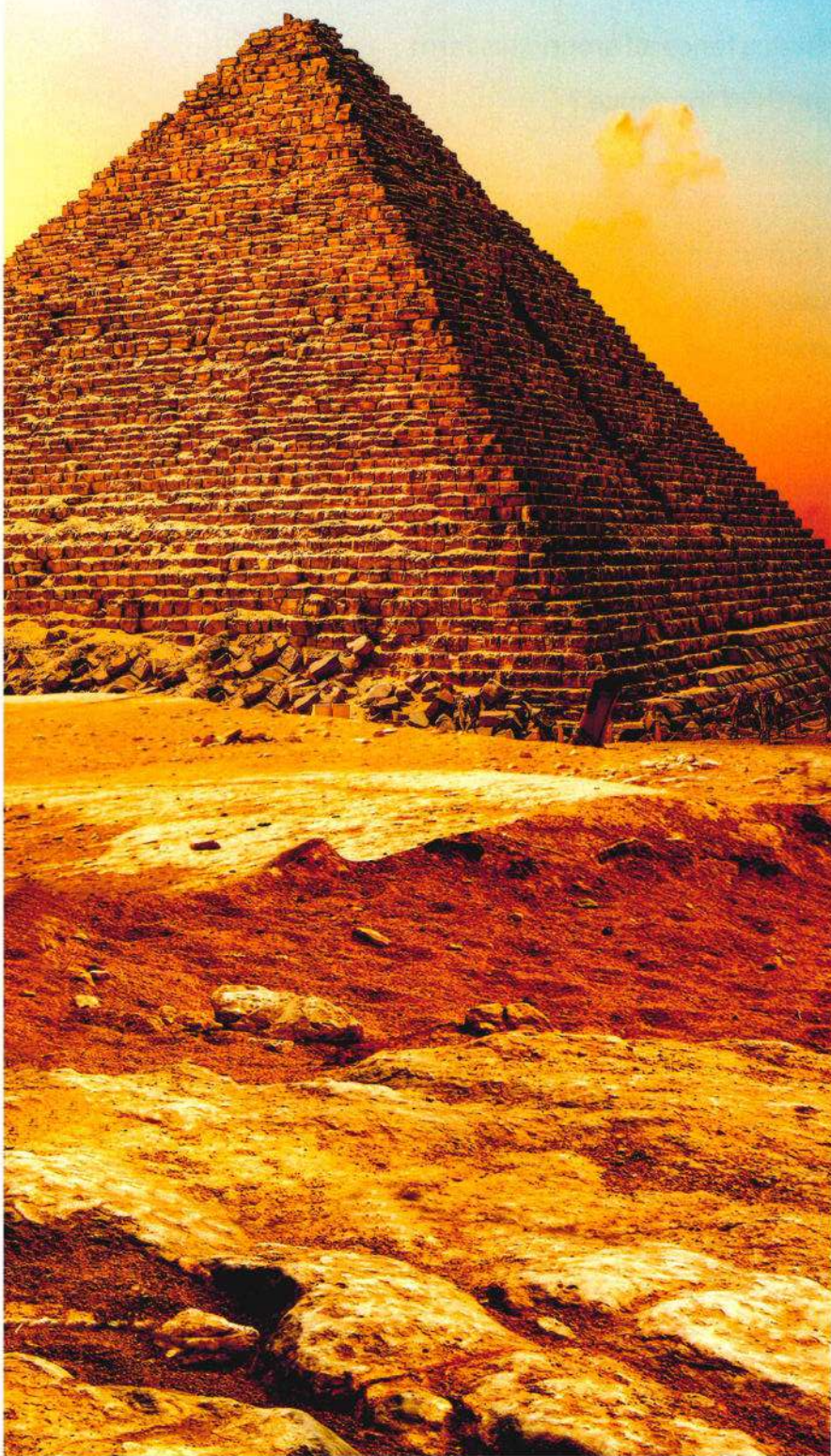
Explore Area and Perimeter



CONCEPT

1

Explore Area and Perimeter



► Lesson 1

Finding Perimeter

Learning Objectives:

- Students will define perimeter.
- Students will use formulas to calculate the perimeter of rectangles.
- Students will explain how to calculate perimeter.

► Lesson 2

Finding Area

Learning Objectives:

- Students will define area.
- Students will use formulas to calculate the area of rectangles.
- Students will explain how to calculate area.

► Lesson 3

Unknown Dimensions

Learning Objectives:

- Students will use formulas to calculate unknowns when given some dimensions of rectangles.

► Lesson 4

Complex Shapes

Learning Objectives:

- Students will calculate the area and perimeter of complex shapes.
- Students will explain their strategies for finding the area and perimeter of complex shapes.

Fast Fact

The Great Pyramid of Giza [also known as the pyramid of Khufu] is the largest of the three pyramids. Its base is just like a square, the length of each side at the base averaging 230 meters.

What is its perimeter ?!

Lesson

1

Finding Perimeter

Learn 1 Using formula to find the perimeter of a rectangle

Problem

Omar is a farmer. His rectangular farm is 60 m long and 40 m wide.

He wants to install a fence all around his farm.

What is the length of the fence ?



Remember

- Perimeter is the distance around the figure.
- Each two opposite sides in the rectangle are equal in length.

You can use a **formula** to find the **perimeter** of a rectangle. Where "P" stands for perimeter, "l" for length and "w" for width.

Rectangle	Perimeter	Formula
	Perimeter = length + width + length + width	$P = l + w + l + w$
	or Perimeter = $[2 \times \text{length}] + [2 \times \text{width}]$	or $P = [2 \times l] + [2 \times w]$
	or Perimeter = $2 \times (\text{length} + \text{width})$	or $P = 2 \times (l + w)$

$$\begin{aligned} \text{So, the length of the fence} &= \underbrace{60 + 40}_{100} + \underbrace{60 + 40}_{100} \quad [\text{Think : } P = l + w + l + w] \\ &= 100 + 100 = 200 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Or the length of the fence} &= [2 \times 60] + [2 \times 40] \quad [\text{Think : } P = [2 \times l] + [2 \times w]] \\ &= 120 + 80 = 200 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Or the length of the fence} &= 2 \times [60 + 40] \quad [\text{Think : } P = [2 \times (l + w)]] \\ &= 2 \times 100 = 200 \text{ m} \end{aligned}$$

Notes for parents :

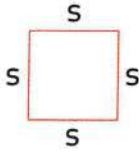
- Make sure your child understand that a formula is a rule that tells how to solve a problem.

Learn 2 Using formula to find the perimeter of a square

- All squares are rectangles. Square has 4 equal sides.

You can use a formula to find the perimeter of a square.

Where "P" stands for perimeter and "s" stands for side length.

Square	Perimeter	Formula
	Perimeter = side + side + side + side or Perimeter = $4 \times \text{side}$	$P = s + s + s + s$ or $P = 4 \times s$

For Example :

To find the perimeter of the opposite square use the formula

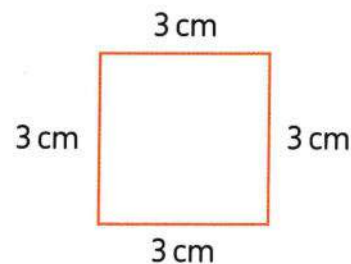
$$P = s + s + s + s$$

$$= 3 + 3 + 3 + 3 = 12 \text{ cm}$$

or

$$P = 4 \times s$$

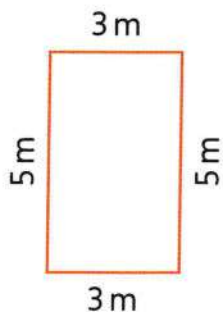
$$= 4 \times 3 = 12 \text{ cm}$$



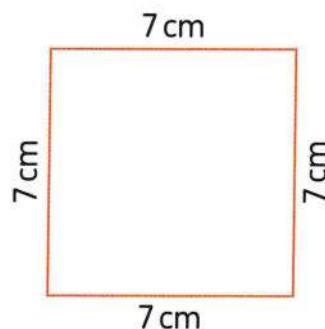
Example 1

Calculate the perimeters of the following shapes. Use different formulas to solve each problem.

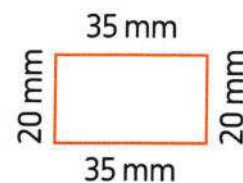
a.



b.



c.



Solution

- a. • First formula : $P = [2 \times l] + [2 \times w] = [2 \times 5] + [2 \times 3] = 10 + 6 = 16 \text{ m}$
 • Second formula : $P = 2 \times [l + w] = 2 \times [5 + 3] = 2 \times 8 = 16 \text{ m}$
- b. • First formula : $P = s + s + s + s = 7 + 7 + 7 + 7 = 28 \text{ cm}$
 • Second formula : $P = 4 \times s = 4 \times 7 = 28 \text{ cm}$

- Remind your child to take careful note of the measurement unit used in each problem.
- Ask your child to find the perimeter of a window in his/her room using a formula.

Lesson 1

c. • First formula : $P = l + w + l + w = 35 + 20 + 35 + 20$

$$= \underset{\downarrow}{35} + \underset{\downarrow}{20} + \underset{\downarrow}{35} + \underset{\downarrow}{20} = 55 + 55 = 110 \text{ mm}$$

• Second formula : $P = 2 \times (l + w) = 2 \times [35 + 20] = 2 \times 55 = 2 \times [50 + 5]$

$$= \underset{\textcircled{50}}{2} \times \underset{\textcircled{5}}{5} = 100 + 10 = 110 \text{ mm}$$



Remember

You can use the distributive property to multiply

Example 2

Ahmed wants to make a rectangular carpet of perimeter 12 m.

Draw different rectangles that could represent his carpet.

Solution

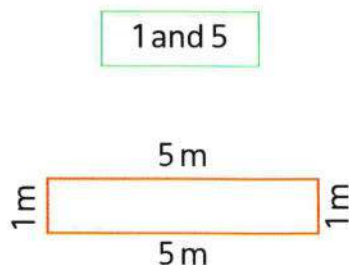


To find different rectangles of perimeter 12 m, do as follows :

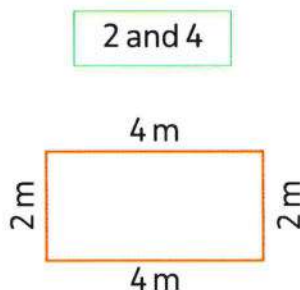
1. Find half of perimeter (half of perimeter = $l + w$)

$$l + w = 12 \div 2 = 6 \text{ m}$$

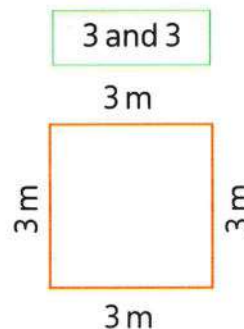
2. Find two numbers their sum is 6 , these two numbers are length and width of the required rectangle



$$P = 12 \text{ m}$$



$$P = 12 \text{ m}$$

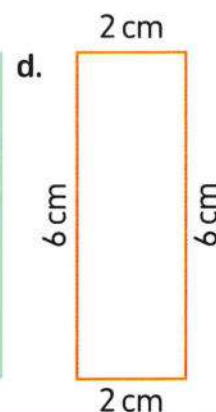
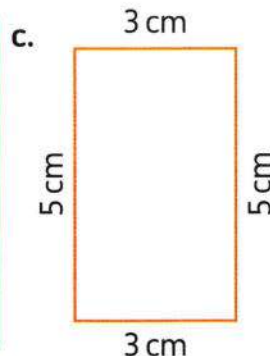
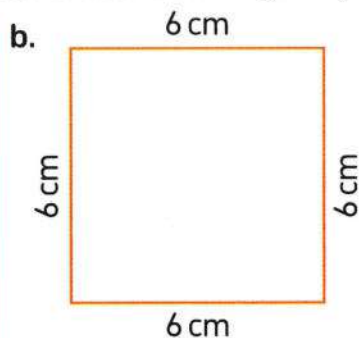
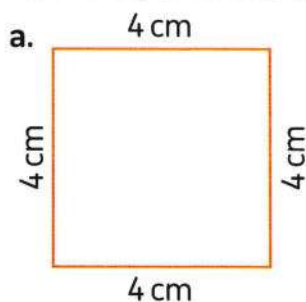


$$P = 12 \text{ m}$$



Check your understanding

Find the perimeter of each of the following shapes.



Notes for parents :

- Review the distributive property using numbers rather than measurements.

Exercise

17

on lesson 1

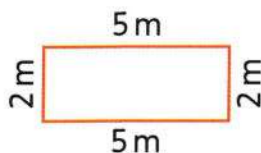
Finding Perimeter

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

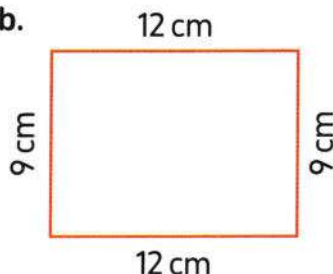
1. Use the formula $P = l + w + l + w$ to calculate the perimeter of each of the following rectangles.

a.



$P =$ _____

b.



$P =$ _____

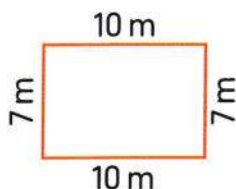
c.



$P =$ _____

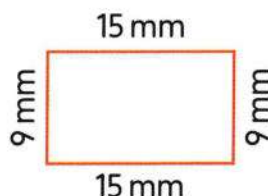
2. Use the formula $P = (2 \times l) + (2 \times w)$ to calculate the perimeter of each of the following rectangles.

a.



$P =$ _____

b.



$P =$ _____

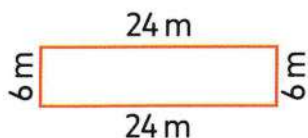
c.



$P =$ _____

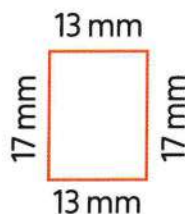
3. Use the formula $P = 2 \times (l + w)$ to calculate the perimeter of each of the following rectangles.

a.



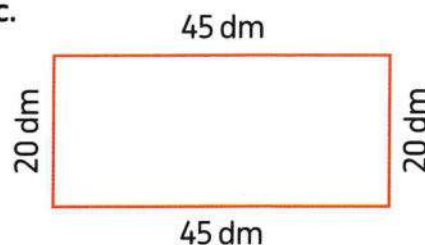
$P =$ _____

b.



$P =$ _____

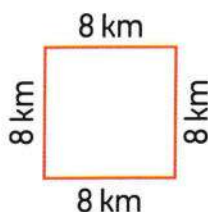
c.



$P =$ _____

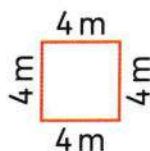
4. Use the formula $P = 4 \times s$ to calculate the perimeter of each of the following squares.

a.



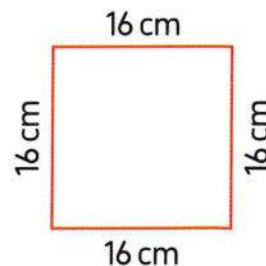
$P =$ _____

b.



$P =$ _____

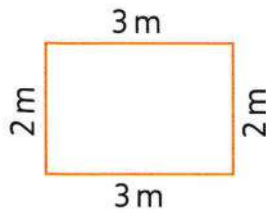
c.



$P =$ _____

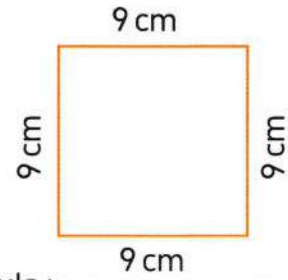
5. Calculate the perimeter of each of the shapes that follow. Use two different formulas to solve each problem. Show your work.

a.



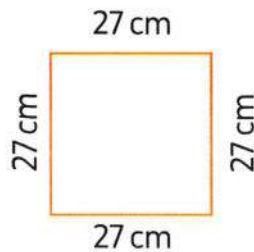
- First formula : _____
- Second formula : _____

b.



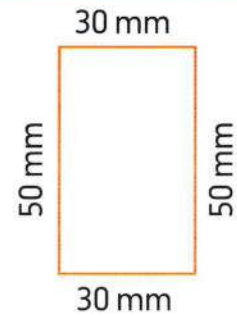
- First formula : _____
- Second formula : _____

c.



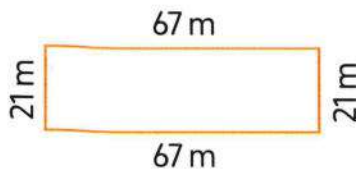
- First formula : _____
- Second formula : _____

d.



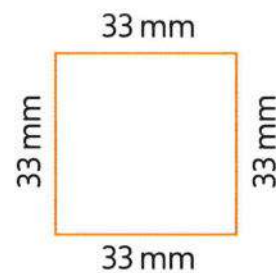
- First formula : _____
- Second formula : _____

e.



- First formula : _____
- Second formula : _____

f.



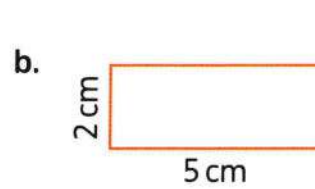
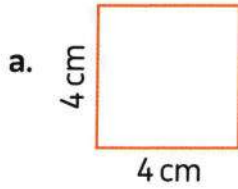
- First formula : _____
- Second formula : _____

6. Complete.

- The perimeter of the rectangle = $(\text{length} + \text{width}) \times \text{_____}$ [Cairo - El-Salam 23]
- A rectangle has length $[l]$ and width $[w]$, its perimeter = _____ [Cairo 23]
- If the side length of a square is $[s]$, then its perimeter = _____ $\times$ _____ [Alex. - Al-Agamy 23]
- A square of side length 3 cm, then its perimeter = _____ cm [Cairo - Rod El-Farag 23]
- A carpet in the shape of a square of side length 3 m, its perimeter = _____ m [Giza 23]
- The perimeter of the rectangle its length is 7 cm and its width is 5 cm equals _____ cm [Souhag 23]
- A rectangular picture its length is 8 cm and its width 5 cm, then its perimeter is _____ [Ismailia 24]

7. Find the perimeter of each of the following.

[El-Menia 24]



8. A rectangular carpet is 6 meters long and 4 meters wide. Find its perimeter.

[El-Menia 24]

9. A rectangular gymnasium is 7 meters long and 4 meters wide. Find its perimeter.

[Port Said 22]

10. Find the perimeter of the rectangle with a length of 8 cm and a width of 6 cm

[Alex. – First Montaza 23]

11. Find the perimeter of the rectangle whose length is 16 cm and its width is 14 cm.

[Cairo 23]

12.  Sarah is putting a border around the edge of a square cake. One side of the cake is 30 centimeters long. How long will the border of Sarah's cake be?

13. Sherif is building a square picture frame. Each side will be 63 millimeters long. What will the perimeter of the frame be?

14.  A soccer team is roping off part of a field to play soccer. To have enough room for a large crowd, they need a space that is 105 meters long by 68 meters wide. How much rope will they need for this part of the field?

15.  A carpenter ant walked a perimeter of 100 centimeters. Draw two different rectangles that could represent its walk.

Multiple Choice Questions

Choose the correct answer.

1. A rectangle its length is l and its width is w
What is its perimeter?

[Port Said 24] [Cairo 23]

- A. $l + w$ B. $l \times w$
C. $2 \times (l + w)$ D. $[2 \times l] + w$

2. Which choice shows the formula for the perimeter of a square?

[P = perimeter, s = side length]

- A. $P = 4 + s$ B. $P = 4 \times s$
C. $P = s \times s$ D. $P = s + s$

3. The perimeter of a square of side length 10 cm is _____ cm

[El-Menia 24]

- A. 100 B. 10
C. 20 D. 40

4. A square whose side length is 5 cm, then its perimeter is _____ cm

[El-Monofia - Sers El-Layyan 23] [Cairo - El-Nozha 23]

- A. 20 B. 25
C. 15 D. 35

5. A rectangle with length 8 cm, width 5 cm, then its perimeter = _____ cm

[El-Monofia 24] [Port Said 24]

- A. 40 B. 13
C. 26 D. 3

6. The perimeter of rectangle of dimensions 4 cm and 5 cm is _____ cm

[Kafir El-Sheikh 24]

- A. 20 B. 9
C. 18 D. 36

7. A rectangle has 4 cm width and 6 cm length, then its perimeter = _____ cm

[Cairo 24]

- A. 10 B. 20
C. 24 D. 48

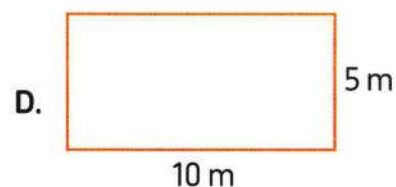
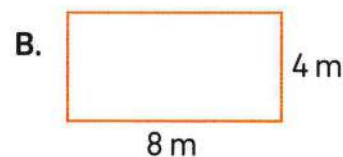
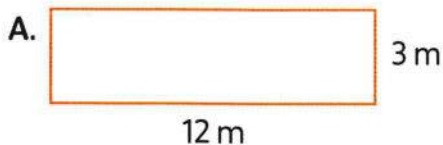
8. The perimeter of the opposite rectangle equals _____



[Cairo - El-Nozha 23]

- A. 10 m B. 20 m
C. 14 m D. 14 cm

9. Which of the following rectangles has perimeter of 32 m?



Lesson

2

Finding Area

Learn 1 Using formula to find the area of a rectangle

Sameh tiled the rectangular floor in his front hall. He used square tiles that measure 1 meter on each side.

How many tiles did he use ?

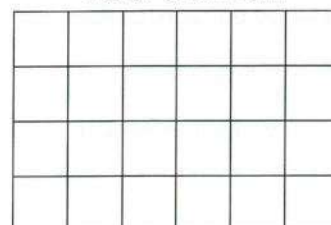
One Way

You can count square units to find the area.

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

Record your answer in square units.
A = 24 square meters.

Hall Floor Plan



Remember

Area is the number of square units needed to cover the surface of a figure.

Another Way

You can also use a formula.

The **formula** for the **area** of a rectangle is

$$\text{Area} = \text{length} \times \text{width} \quad \text{Or} \quad A = l \times w$$

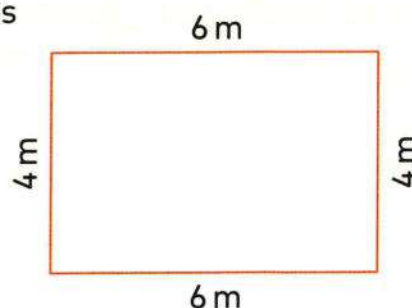
Use the formula to find the area.

$$A = l \times w$$

$$A = 6 \times 4$$

$$A = 24 \text{ square meters}$$

So, Sameh used 24 tiles.



Math tip

You can write square meters as m^2 , and write square centimeters as cm^2

Notes for parents :

- Ask your child to find the area of a carpet in his/her room using a formula.

Learn 2 Using formula to find the area of a square

The formula for the area of a square is

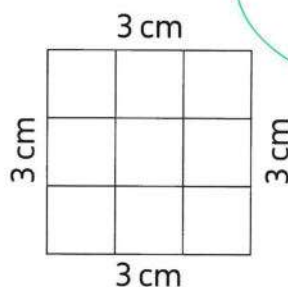
Area = side length $\times$ itself **Or** $A = s \times s$

For Example :

The area of the opposite square

$$A = s \times s = 3 \times 3$$

$$= 9 \text{ square centimeters [cm}^2\text{]}$$



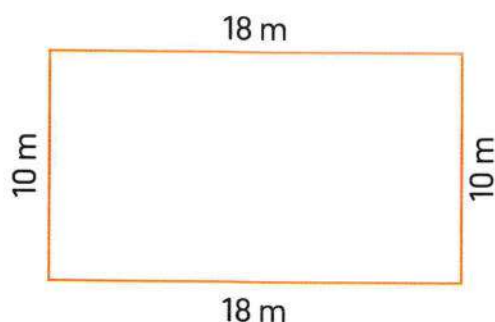
Try to count square units to find the area, you will get the same result.



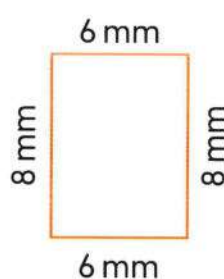
Example 1

Find the area of each of the following.

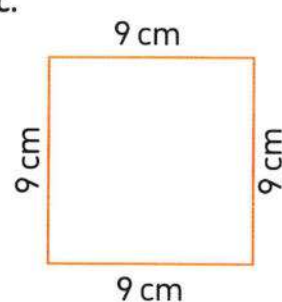
a.



b.



c.



Solution

a. $A = l \times w = 18 \times 10 = 180 \text{ m}^2$

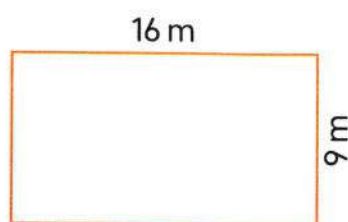
c. $A = s \times s = 9 \times 9 = 81 \text{ cm}^2$

b. $A = l \times w = 8 \times 6 = 48 \text{ mm}^2$

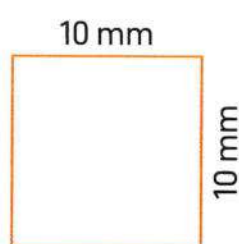
Example 2

Find the area and perimeter of each figure.

a.



b.



Remember

- **Perimeter :**
Measurement of the distance **around** the shape.
- **Area :**
Measurement of the space **inside** the shape.

Notes for parents :

- Ask your child to use a formula to calculate the area of the door of his/her room.

Solution

$$\text{a. } A = l \times w = 9 \times 16 = 9 \times [10 + 6] = 90 + 54 = 144 \text{ m}^2$$

$$P = 2 \times [l + w] = 2 \times [9 + 16] = 2 \times 25$$

$$= 2 \times [20 + 5] = 40 + 10 = 50 \text{ m}$$

$$\text{b. } A = s \times s = 10 \times 10 = 100 \text{ mm}^2$$

$$P = 4 \times s = 4 \times 10 = 40 \text{ mm}$$

Example 3

A small fish farm in the shape of a rectangle. Its dimensions are 10 meters and 8 meters. What is the area of the fish farm?

Solution

$$A = l \times w = 10 \times 8 = 80 \text{ m}^2$$

Example 4

The area of a piece of paper in the shape of a rectangle is 12 square meters. What is the perimeter of this piece? Draw your answer and write the dimensions.

Solution

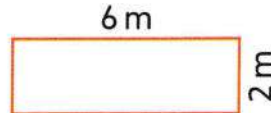
You need to find two numbers their product is 12, these two numbers are the rectangle dimensions.

1 m and 12 m



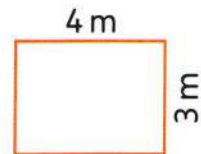
$$\begin{aligned} P &= l + w + l + w \\ &= 1 + 12 + 1 + 12 \\ &= 13 + 13 = 26 \text{ m} \end{aligned}$$

2 m and 6 m



$$\begin{aligned} P &= [2 \times l] + [2 \times w] \\ &= [2 \times 6] + [2 \times 2] \\ &= 12 + 4 = 16 \text{ m} \end{aligned}$$

3 m and 4 m

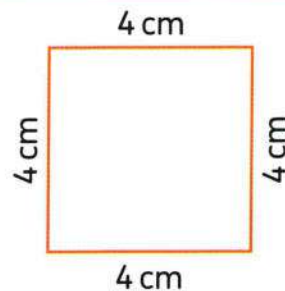
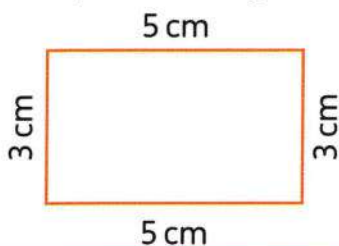


$$\begin{aligned} P &= 2 \times [l + w] \\ &= 2 \times [4 + 3] \\ &= 2 \times 7 = 14 \text{ m} \end{aligned}$$

You can use different formulas to calculate the perimeter of a rectangle.

Check your understanding

Circle the shape that has greater area.



• Challenge your child to draw many rectangles with area 30 cm^2 .

Exercise

18

on lesson 2

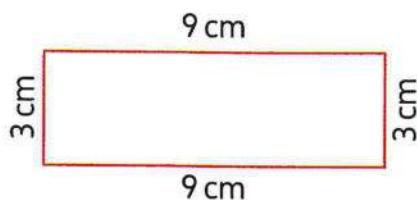
Finding Area

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

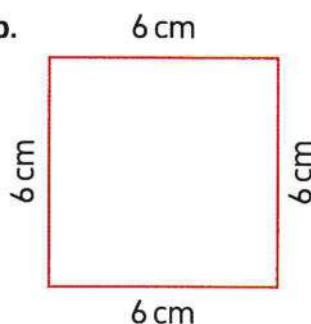
From the school book

1. Write the formula of the area of each rectangle or square, then find its area.

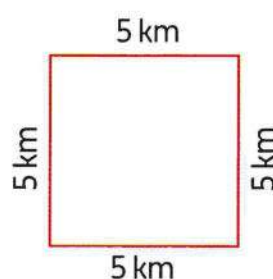
a.



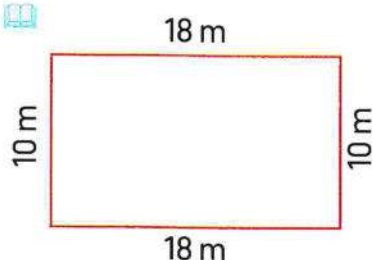
b.



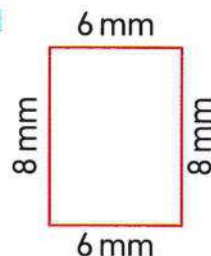
c.



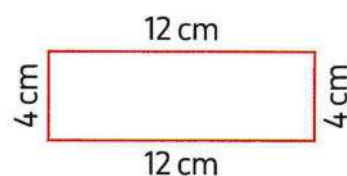
d.



e.

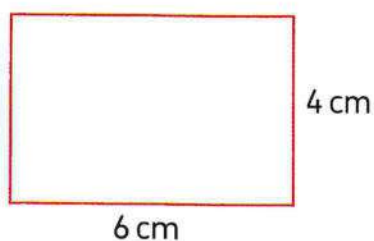


f.



2. Find the area and perimeter of each figure.

a.



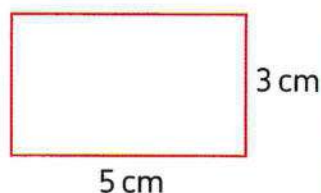
Area = _____

Perimeter = _____

[Cairo 24]

[El-Monofia – Sadat City 23]

b.

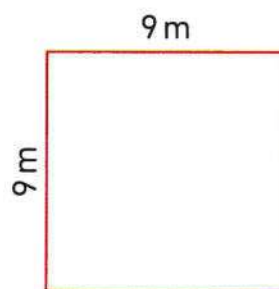


Area = _____

Perimeter = _____

[Giza 24] [El-Menia 23]

c.

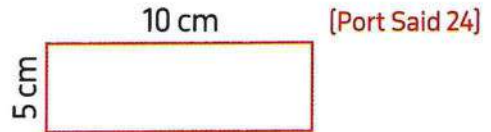
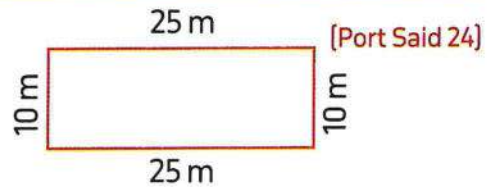


Area = _____

Perimeter = _____

3. Complete.

- a. Area of square = _____ $\times$ _____ [Alex. - West 23]
- b. A square whose side length is 4 meters, then its area is _____ [El-Menia - Dir Mawas 22]
- c. Area of square which its side length 6 cm is _____ cm^2 [Port Said 24] [Cairo 24]
- d. The area of square of side length 8 cm is _____ cm^2  7 cm [Alex. 24]
- e. The area of the opposite square is _____ cm^2 [Cairo 24]
- f. A garden in the shape of a square whose side length is 9 meters ,
then its area = _____ square meters. [Alex. - Agamy 23] [Cairo - El-Salam 23]
- g. A rectangle of length 6 cm and width 4 cm, then its area = _____ [Cairo 24]
- h. A rectangle of length 8 cm, width 3 cm , then its area = _____ cm^2 [Cairo - El-Marg 23]
- i. The area of a rectangle its dimensions are 5 cm and 3 cm is _____
- j. The length of a rectangle is 10 mm and the width is 8 mm, then the area of this
rectangle equals _____

4. Find the area of the opposite rectangle.**5. Find the area of the opposite rectangle.****6. Calculate the area of a rectangle if its length is 9 cm and width is 5 cm**

[Cairo 23]

7. A square whose side length is 4 meters, then find its area in square meters.

[Cairo 24]

8. Sherif has a garden in squared shape with side length 5 meters.

What is the area of this garden ?

[Beni Suef 24]

9. A square picture of side length 8 cm. Hussein wants to cut a piece of glass to cover this picture, what is the area of the glass piece?

[El-Kalyoubia 22]

10. A square-shaped room has a side length 3 meters. What is the area of the ground of the room in square meters ? [Cairo – El-Nozha 23]

11. A garden in the shape of a rectangle its length is 7 m and its width is 5 m. What is the area of the garden by square meters ? [Souhag 23]

12.  A glass company is cutting a piece of glass to cover the top of a banquet table. The table measures 8 meters by 6 meters. What is the area of the glass needed for the table ?

13.  A small rectangular ant farm measures 20 centimeters by 8 centimeters. What is the area of the ant farm ?

14. A square-shaped room has a side length 4 meters. What is the area of the ground of the room in square meters? [Souhag 22]

15. Which is greater, the area of a rectangle with dimensions 7 cm and 5 cm or the area of a square with side length 6 cm ? [Giza – Abo El-Nomros 23]

16.  You have 36 square carpet tiles to arrange on the floor in the shape of a rectangle. Draw two possible arrangements and label the length and width. What is the perimeter of each arrangement ? What is the area ?

• First

A = _____

P = _____

• Second

A = _____

P = _____

Challenge

17. What is the length of a rectangle, if its area is 24 cm^2 and its perimeter equals a number between 20 cm and 30 cm ?

Choose the correct answer.

1. If the length of a rectangle is l and its width is w , then its area $A =$ _____
[Cairo - El Shrouk 23]

A. $A = l - w$

B. $A = l + w$

C. $A = l \times w$

D. $A = l \div w$
2. Area of square = side length $\times$ _____
[Ismailia 23]

A. itself

B. width

C. 4

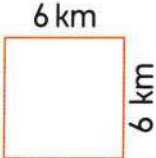
D. height
-
3. The area of the opposite figure equals _____

A. 24 km

B. 36 km

C. 36 km^2

D. 24 km^2


-
4. A rectangle its length is 8 cm and its width is 4 cm, then its area = _____ cm^2
[Cairo 24] [Giza - 6th October 22]

A. 32

B. 12

C. 24

D. 64
-
5. Area of rectangle of length 8 cm and width 5 cm equals _____ cm^2
[El-Dakahlia 22]

A. 3

B. 13

C. 26

D. 40
-
6. A rectangle of length 20 cm and width 10 cm, then its area equals _____ cm^2
[Giza - El-Haram 22] [El-Monofia - Sers El-Layyan 23]

A. $2 \times 20 + 2 \times 10$

B. $20 + 10$

C. 60

D. 200
-
7. A rectangle of length 9 cm, width 6 cm, then its area = _____ cm^2
[El-Monofia - Quesna 23]

A. 54

B. 30

C. 45

D. 15
-
8. The area of a rectangle with 4 cm long and 3 cm wide equals _____ cm^2
[Luxor 24]

A. 12

B. 16

C. 10

D. 20
-
9. A square whose side length is 5 cm, then its area = _____ cm^2
[Giza 24] [Alex. 24]

A. 21

B. 25

C. 12

D. 10
-
10. The area of the square whose side length is 6 cm equals _____ cm^2
[Cairo 24]

A. 11

B. 30

C. 24

D. 36

Unknown Dimensions

Learn 1

Use the area formulas to calculate the unknown dimension

First : The rectangle

Amal made a rectangular flower garden with an area of 35 square meters and its length is 7 meters.

How long is its width ?

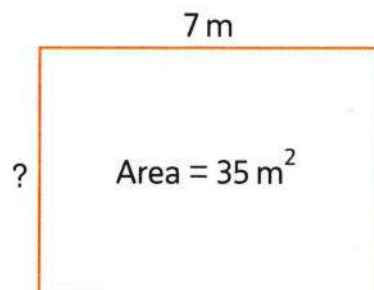
Use the formula to find the unknown width [w].

$$A = l \times w$$

$$w = A \div l$$

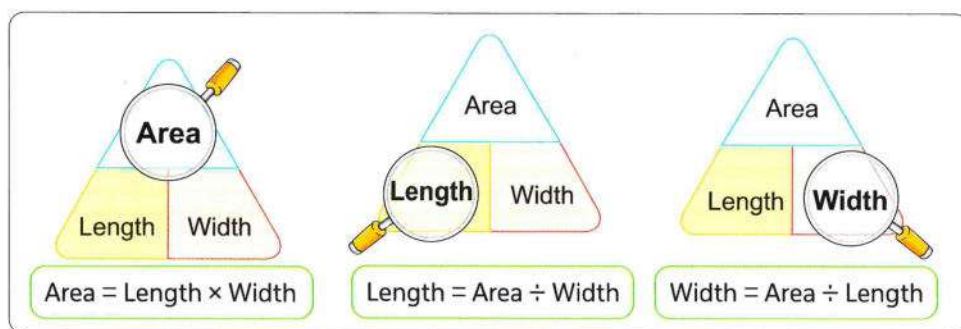
$$w = 35 \div 7 = 5 \text{ m}$$

So, the width of the garden is 5 meters.



Remember

Area of a rectangle = length $\times$ width



Second : The square

A square is of area 36 cm².

What is its side length ?

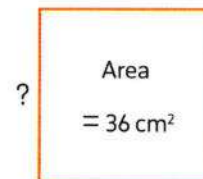
Use the formula to find the unknown side length.

$$A = s \times s$$

$$36 = s \times s$$

$$s = 6 \text{ cm [because } 6 \times 6 = 36]$$

So, the side length is 6 cm.



Remember

Area of a square = side length $\times$ side length

Hint

Look for a number if multiplied by itself gives the area.

Notes for parents :

- In this lesson, your child will apply area and perimeter formulas to solve for an unknown dimension in a rectangle or a square.

Learn 2**Use the perimeter formulas to calculate the unknown dimension****First : The rectangle**

A rectangular piece of paper has a perimeter 28 cm and width 6 cm.

How long is its length ?

**Remember**

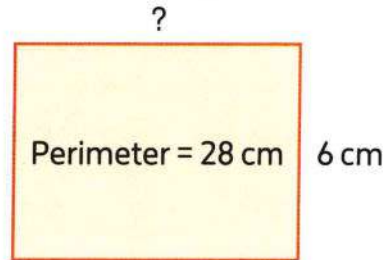
- Perimeter of a rectangle = $(2 \times \text{length}) + (2 \times \text{width})$
- Half of perimeter = $\text{length} + \text{width} = \text{perimeter} \div 2$

- Use the formula to find the unknown length [l].

$$P = 2 \times [l + w]$$

- Half of perimeter = $28 \div 2 = 14$
- Length = half of perimeter – width
- Length = $14 - 6 = 8$ cm

So, the length is 8 cm.

**Another Way Using Bar Model**

$$P = [2 \times l] + [2 \times w]$$

P	
$2 \times l$	$2 \times w$

$$2 \times w = 2 \times 6 = 12$$

28	
$2 \times l$	12

$$2 \times l = 28 - 12 \quad 2 \times l = 16$$

$$l = 16 \div 2 = 8 \text{ cm}$$

Second : The square

A square is of perimeter 36 cm.

What is its side length ?

**Remember**

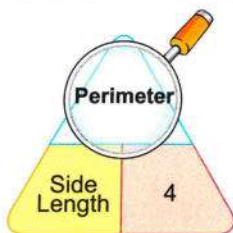
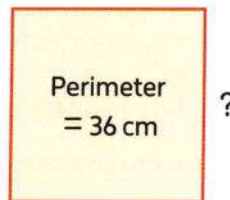
Perimeter of a square = side length $\times 4$

Use the formula to find the unknown side length [s].

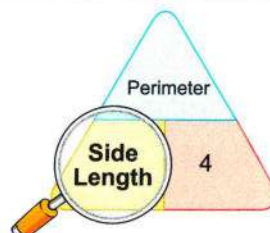
$$P = s \times 4$$

$$36 = s \times 4 \quad s = 36 \div 4 = 9 \text{ cm}$$

So, the side length is 9 cm.



$$\text{Perimeter} = \text{Side length} \times 4$$



$$\text{Side length} = \text{Perimeter} \div 4$$



- Ask your child questions as : Which number if multiplied by itself you get 16 , 25 , 36 , 49 , ... ?

Conclusion**In a rectangle** l = length , w = width , P = perimeter , A = area

$A = l \times w$

$P = 2 \times (l + w)$

$l = A \div w$

$l = (P \div 2) - w$

$w = A \div l$

$w = (P \div 2) - l$

Conclusion**In a square** s = side length , P = perimeter , A = area

$A = s \times s$

$P = s \times 4$

 s is a number if multiplied by itself gives the area.

$s = P \div 4$

Example 1

- a. The area of a rectangle is 28 cm^2 . If its width equals 4 cm, find its length and its perimeter.
 b. A square is of area 16 m^2 . Find its side length and its perimeter.

Solution

a. $A = 28 \text{ cm}^2$ $w = 4 \text{ cm}$ $l = ?$

$l = A \div w = 28 \div 4 = 7 \text{ cm}$

$P = 2 \times (l + w)$

$= 2 \times (7 + 4) = 2 \times 11 = 22 \text{ cm}$

b. $A = 16 \text{ m}^2$ $s = ?$

$s = 4 \text{ m}$ [because $4 \times 4 = 16$]

$P = s \times 4 = 4 \times 4 = 16 \text{ m}$

Example 2

- a. The perimeter of a rectangle is 20 m. If its length equals 6 m, find its width and its area.
 b. A square is of perimeter 32 cm. Find its side length and its area.

Solution

a. $P = 20 \text{ m}$ $l = 6$ $w = ?$

$P \div 2 = 20 \div 2 = 10 \text{ m}$

$w = (P \div 2) - l = 10 - 6 = 4 \text{ m}$

$A = l \times w = 6 \times 4 = 24 \text{ m}^2$

b. $P = 32 \text{ cm}$ $s = ?$

$s = P \div 4 = 32 \div 4 = 8 \text{ cm}$

$A = s \times s = 8 \times 8 = 64 \text{ cm}^2$

 Check your understanding

1. If the area of a rectangle is 35 cm^2 and its length equals 7 cm, find its width.
2. A square is of area 25 cm^2 , find its side length and its perimeter.
3. If the perimeter of a rectangle is 18 cm and its width equals 3 cm, find its length and its area.
4. A square is of perimeter 40m. Find its side length.

Notes for parents :

- Revise with your child time table 4. Practise him/her how he/she can divide by 4.

Exercise 19

on lesson 3

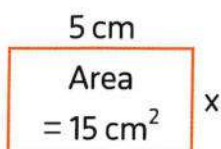
Unknown Dimensions

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

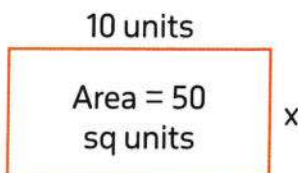
1. Find the unknown side length based on the area given of each rectangle.

a.

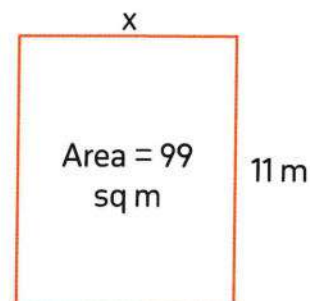


[Alex. 24]

b.

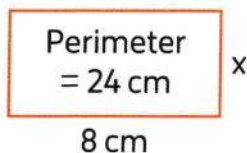


c.

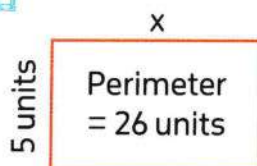


2. Find the unknown side length based on the perimeter given of each rectangle.

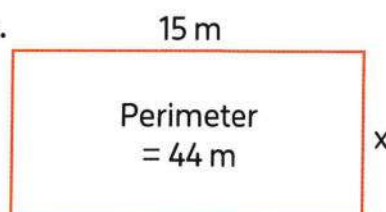
a.



b.

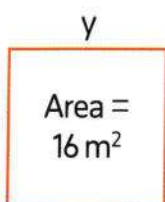


c.

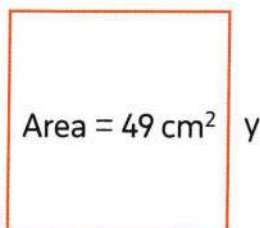


3. Find the unknown side length based on the area given of each square.

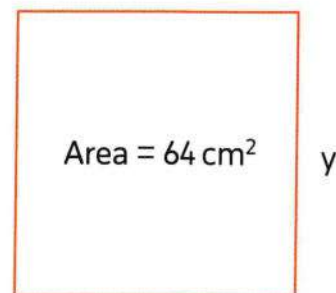
a.



b.



c.



4. Find the unknown side length based on the perimeter given of each square.

a.

Perimeter
= 20 cm

y

[Alex. 24]

b.

Perimeter
= 12 km

y

c.

Perimeter
= 44 m

y

5. Complete each of the following.

- a. If the perimeter of a square is 20 cm, then its side length is _____ cm
[El-Behiera – Hosh Essa 23]
- b. A square its perimeter equals 24 cm, then the side length = _____ cm [Kafr El-Sheikh 24]
- c. The length of the side of a square whose perimeter is 28 cm is _____ cm [Giza – Awseem 23]
- d. The side length of a square with perimeter 40 cm is _____ [El-Beheira 23]
- e. The perimeter of a square is 36 cm, then the length of its side is _____ cm [Aswan - Kom Ombo 23]
- f. A square its area is 25 m^2 , then its side length is _____ cm [El-Menia 24]
- g. A square is of area 49 km^2 , then its side length is _____
- h. A square has an area of 16 square centimeters, then its perimeter is _____ cm
[Cairo - El-Kobba 22]
- i. A square its perimeter is 12 cm, then its area is _____ cm^2 [Alex. 24]
- j. If the area of a rectangle is 30 cm^2 and its length is 6 cm, then its width is _____ cm
[Giza 24]
- k. The area of a rectangle is 42 km^2 , and its width is 6 km, then its length is _____
- l. The area of a rectangle is 45 m^2 , and its length is 9 m, then its perimeter is _____
- m. If the perimeter of a rectangle is 26 cm, and its width is 4 cm, then its length is _____
- n. A rectangle of perimeter 32 m, and its length is 9 m, then its area is _____

6. Complete the following table of rectangles.

Length	Width	Area	Perimeter
a. 5 cm	10 cm	_____	_____
b. _____	5 m	10 m^2	_____
c. 9 km	_____	72 km^2	_____
d. 6 dm	_____	_____	22 dm
e. _____	2 mm	_____	18 mm

7. Complete the following table of squares.

Side length	Area	Perimeter
a. 9 m	_____	_____
b. _____	64 cm ²	_____
c. _____	_____	24 mm

8. Ali sketched a rectangular painting with an area of 28 cm², the width of his painting is 4 cm
Find its perimeter.

9. Tahani is building a square picture frame for her father. The picture she has to frame has an area of 49 square centimeters. What is the width and the length of her frame ?

10. Emad is building a rectangular garden with 26 m of fencing.
What is the length and the area of it if its width is 6 m ?

11. Mai walked once around the squared playground. She covered a distance of 40 m.
What is the area of this playground ?

12. A rectangle is 6 meters wide. The length is 2 meters more than its width. What is the area and perimeter of the rectangle ?

 Challenge

13. Mathew has two pictures, both with an area of 36 cm². One is a rectangle with length 9 cm, and the other is a square. Which has the greater perimeter ?

Multiple Choice Questions

Choose the correct answer.

1. Length of a rectangle = _____

- A. $\text{Area} \div \text{length}$ B. $\text{Area} \div \text{width}$
C. $\text{Length} \times \text{width}$ D. $\text{Area} \times \text{width}$

2. If the area of a rectangle is 35 cm^2 and its length is 7 cm, then its width = _____

[Beni Suef 24] [El-Menia 23]

- A. 4 cm B. 5 cm
C. 6 cm D. 7 cm

3. If the area of rectangle is 48 cm^2 and its width is 6 cm, then its length = _____ cm

[Ismailia 24]

- A. 42 B. 8
C. 18 D. 288

4. A square whose area is 36 km^2 , then its side length is _____ km

[Alex. - First Montaza 23]

- A. 4 B. 5
C. 6 D. 9

5. The side length of a square whose perimeter is 28 cm is _____ cm

[Souhag 23]

- A. 7 B. 14
C. 5 D. 4

6. The perimeter of a square is 40 cm, then its side length = _____ cm

[Cairo 23]

- A. 4 B. 1,600
C. 160 D. 10

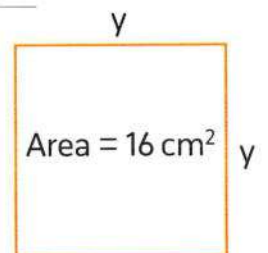
7. A rectangle with perimeter 22 cm and its width = 4 cm, then its length = _____

[Giza 24]

- A. 4 cm B. 8 cm
C. 7 cm D. 18 cm

8. The value of y is _____

- A. 4 cm
B. 6 cm
C. 10 cm
D. 8 cm



9. A rectangle with area 15 cm^2 and width 3 cm. What is its perimeter?

- A. 8 cm B. 15 cm
C. 16 cm D. 16 cm^2

10. A square with area 1 m^2 . What is its perimeter?

- A. 1 m B. 2 m
C. 3 m D. 4 m

11. Nahed wants to put a ribbon border around a blanket she is making. The width of the blanket is 3 meters. The perimeter of the blanket is 14 meters. How long is the length of the blanket?

[Alexandria - Borg El-Arab 22]

- A. 17 meters B. 11 meters C. 8 meters D. 4 meters

Lesson

4

Complex Shapes

Learn

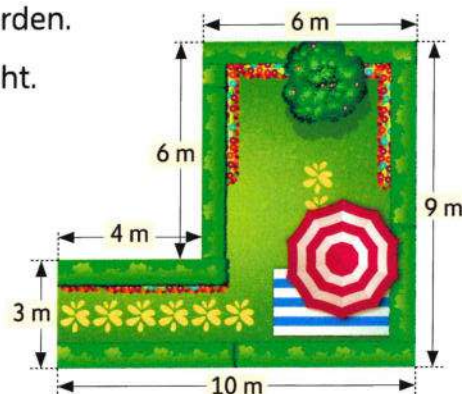
How to find perimeter and area of complex figures ?

Andy wants to put a fence around his garden.

The space he will use is shown at the right.

How much fence should he buy ?

What is the area of his garden ?



Find the perimeter

Add the lengths of the sides.

$$\text{Perimeter} = 10 + 3 + 4 + 6 + 6 + 9 = 38 \text{ m}$$

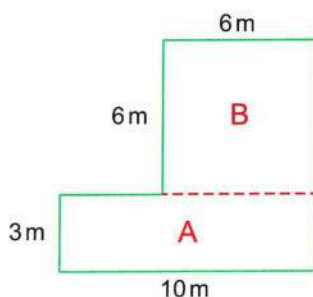
He should buy 38 meters of fence.

Find the area

There are many ways to calculate the area.

Step 1

Separate the figure into a rectangle **A** and a square **B**.



Step 2

Calculate the area of each figure.

Area of the rectangle **A**

$$\begin{aligned} A &= l \times w \\ &= 10 \times 3 \\ &= 30 \text{ sq m} \end{aligned}$$

Area of the square **B**

$$\begin{aligned} A &= s \times s \\ &= 6 \times 6 = 36 \text{ sq m} \end{aligned}$$

Step 3

Add both areas to find the area of the whole figure.

$$30 + 36 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

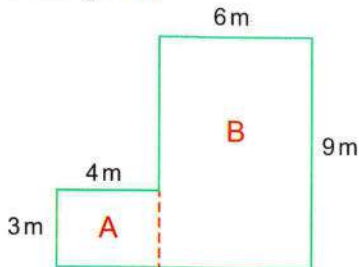
Notes for parents :

- In this lesson, your child will learn and apply strategies for calculating the area and perimeter of complex shapes. Your child will use a variety of strategies to break shapes down into squares and rectangles to calculate their measurements.

Another Way to find area

Step 1

Separate the figure into a rectangle **A** and a rectangle **B**.



Step 2

Calculate the area of each figure.

Area of the rectangle A

$$\begin{aligned}\text{Area} &= l \times w \\ &= 4 \times 3 = 12 \text{ sq m}\end{aligned}$$

Area of the rectangle B

$$\begin{aligned}\text{Area} &= l \times w \\ &= 9 \times 6 = 54 \text{ sq m}\end{aligned}$$

Step 3

Add both areas to find the area of the whole figure.

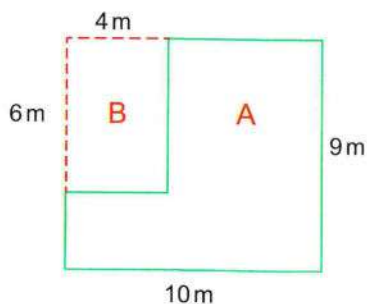
$$12 + 54 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

Another Way to find area

Step 1

Complete the figure as a big rectangle **A** and a small rectangle **B**.



Step 2

Calculate the area of each figure.

Area of the rectangle A

$$\begin{aligned}A &= l \times w \\ &= 10 \times 9 = 90 \text{ sq m}\end{aligned}$$

Area of the rectangle B

$$\begin{aligned}A &= l \times w \\ &= 6 \times 4 = 24 \text{ sq m}\end{aligned}$$

Step 3

Subtract both areas to find the area of the required figure.

$$90 - 24 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

Note

The area of a complex figure does not change when divided in different ways.

Notes for parents :

- Make sure that your child understand the area of a complex figure does not change when he/she calculate in different ways.

Example 1

Calculate the perimeter and area of the figure.

Solution

First you should find the length of the unknown sides x and y

$$x = 23 - 13 = 10 \text{ m} \quad y = 18 - 6 = 12 \text{ m}$$

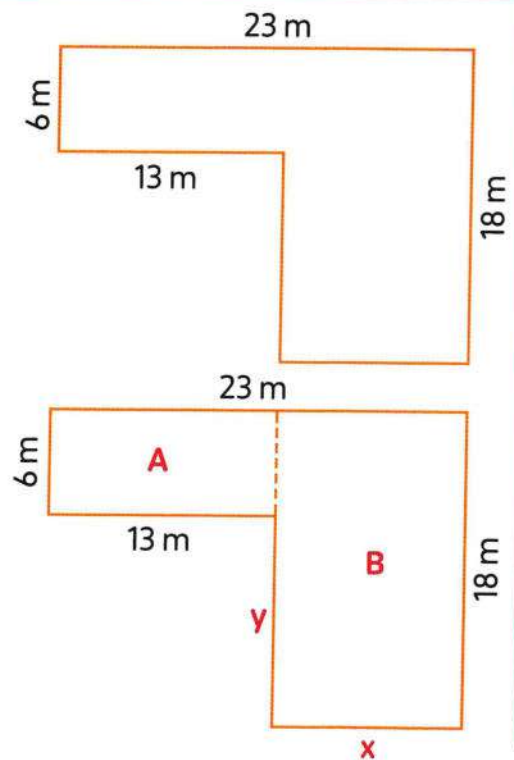
$$\text{The perimeter} = 23 + 18 + 10 + 12 + 13 + 6 = 82 \text{ m}$$

The area = Area of section A + Area of section B

$$= (13 \times 6) + (18 \times 10)$$

$$= (10 + 3) \times 6 + 180$$

$$= (10 \times 6) + [3 \times 6] + 180 = 60 + 18 + 180 = 258 \text{ m}^2$$

**Example 2**

Combine these two simple shapes to form a complex shape.

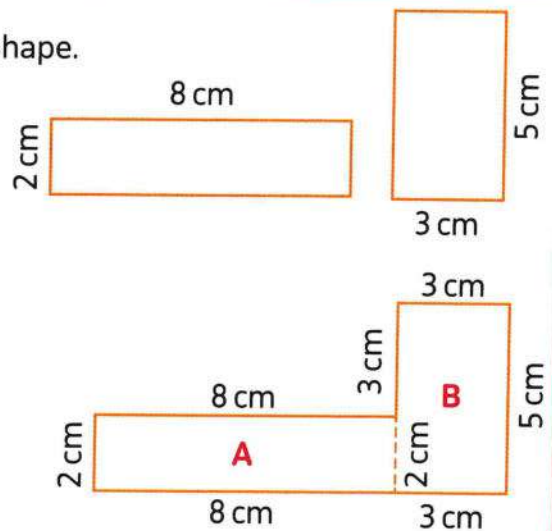
Sketch your shape, labeling the sides.

Then calculate the perimeter and the area of the complex shape.

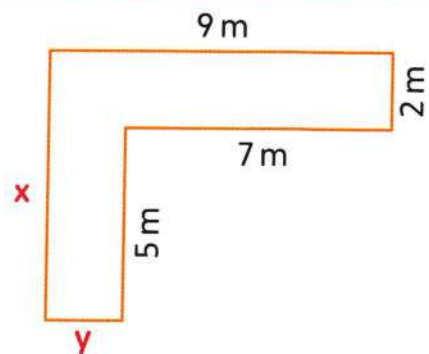
Solution

- The perimeter = $8 + 3 + 3 + 5 + 3 + 8 + 2 = 32 \text{ cm}$

- The area = Area of section A + Area of section B
 $= (8 \times 2) + (5 \times 3) = 16 + 15 = 31 \text{ cm}^2$

**Check** your understanding

Find the perimeter and the area of the complex figure.



- When forming a complex shape out of simple shapes, the perimeter of this complex shape may be equal different results according to how you form this complex shape, but the area of the complex shape does not change.

Exercise

20

on lesson 4

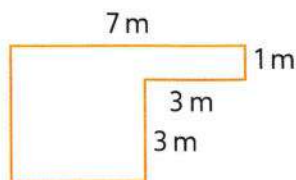
Complex Shapes

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

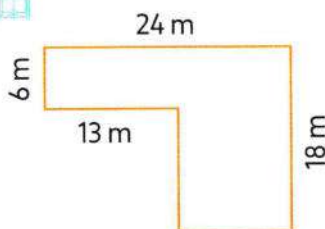
From the school book

1. Calculate the area and the perimeter of each complex shape. Show your work.

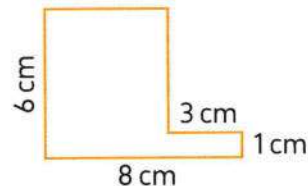
a.



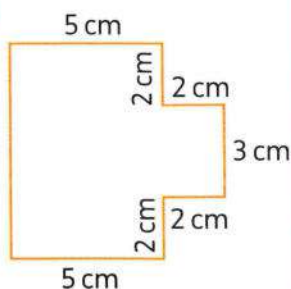
b.



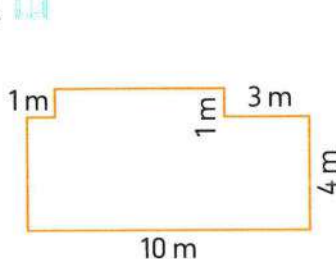
c.



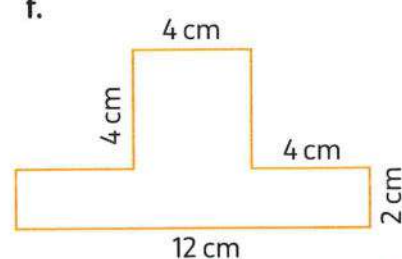
d.



e.

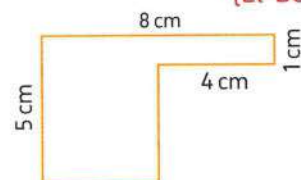


f.



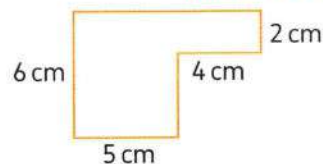
[Kafr El-Sheikh 24]

2. Find the area of the opposite figure.



[El-Beheira 24]

3. Find the area of the opposite figure.

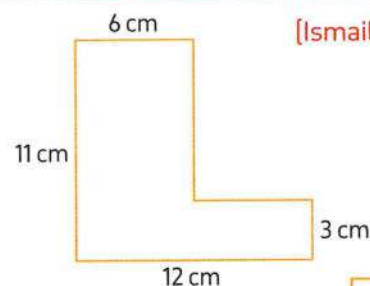


[Alex. - Al-Agamy 23]

4. Find the area and perimeter.

A = _____

P = _____



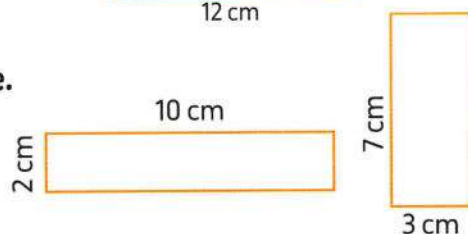
[Ismailia 23]



Challenge

5. Combine these two simple shapes into a complex shape.

Sketch your shape, labeling the sides. Then, calculate the area and perimeter for the complex shape.



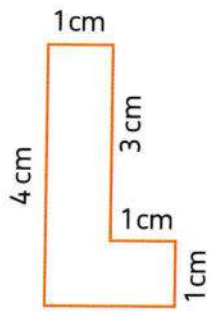


Multiple Choice Questions

Choose the correct answer.

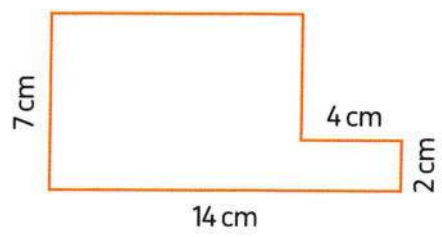
1. What is the perimeter of the figure ?

- A. 10 cm
- B. 12 cm
- C. 13 cm
- D. 15 cm



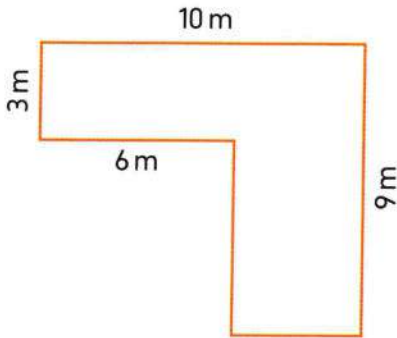
2. What is the area of the figure ?

- A. 24 cm^2
- B. 42 cm^2
- C. 78 cm^2
- D. 87 cm^2



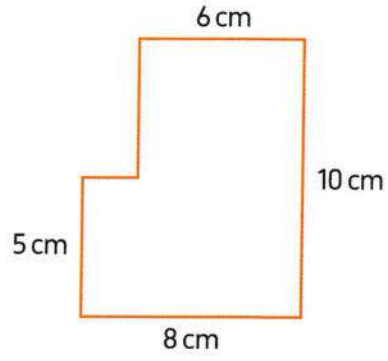
3. What is the area of the figure ?

- A. 54 m^2
- B. 32 m^2
- C. 32 cm^2
- D. 54 cm^2



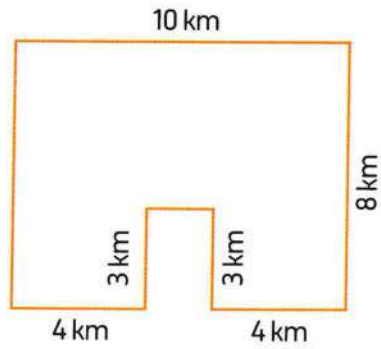
4. What is the perimeter of the figure ?

- A. 70 m
- B. 36 m
- C. 36 cm
- D. 70 cm



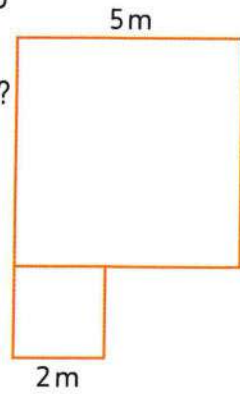
5. What is the area of the figure ?

- A. 74 m^2
- B. 42 km
- C. 42 m
- D. 74 km^2



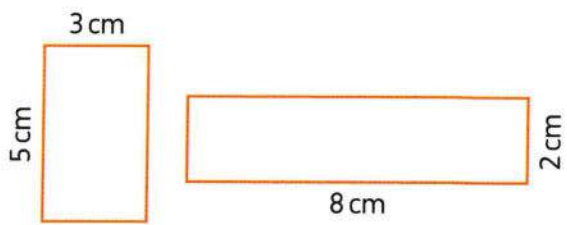
6. Two squares are joined to make a figure. What is the perimeter of the figure ?

- A. 7 m
- B. 10 m
- C. 24 m
- D. 35 m



7. If you combine the two rectangles to make a complex figure, what is the area of the resulted figure ?

- A. 18 cm^2
- B. 31 cm^2
- C. 36 cm^2
- D. 40 cm^2

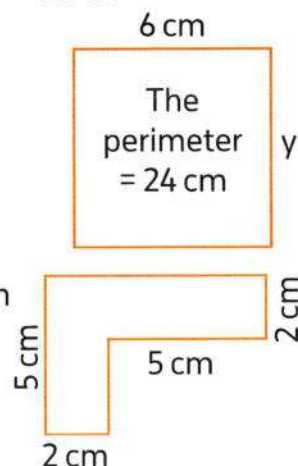


Unit Four Assessment



1. Choose the correct answer.

1. The perimeter of the square = _____ where s is its side length. [Port Said 24]
 - A. $s \times 4$
 - B. $s \times s$
 - C. $s \times 3$
 - D. $s + 4$
2. A rectangle its length is $[l]$ and its width is $[w]$, what is its perimeter? [Giza – Awseem 23]
 - A. $l + w$
 - B. $l \times w$
 - C. $2 \times [l + w]$
 - D. $[2 \times l] + w$
3. A square of side length 2 cm, its perimeter = _____ cm [Alex. 24]
 - A. 2
 - B. 6
 - C. 4
 - D. 8
4. The perimeter of rectangle whose length is 8 cm and width is 4 cm equals _____ cm [EL-Monofia 24]
 - A. 2
 - B. 12
 - C. 24
 - D. 35
5. A rectangle is of width 3 cm and its length is 5 cm, then its area equals _____ cm^2 [EL-Monofia 24]
 - A. 16
 - B. 20
 - C. 15
 - D. 35
6. In the opposite figure :
The value of y is _____
 - A. 4 cm
 - B. 5 cm
 - C. 6 cm
 - D. 7 cm
7. The perimeter of the opposite complex figure equals _____ cm
 - A. 14
 - B. 21
 - C. 19
 - D. 24

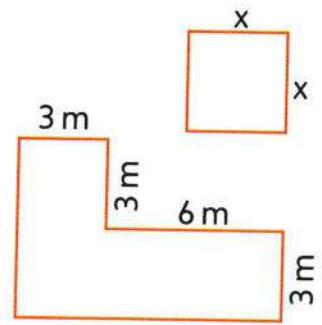


2. Complete the following.

1. A rectangle of length 7 cm and width 4 cm, then its perimeter = _____ cm [Beni Suef 24]
2. A square of side length 7 m, then its area = _____ m^2
3. The side length of a square = its perimeter $\div$ _____
4. The perimeter of the rectangle = _____ + _____
5. A square of side length 5 units, then its perimeter = _____ units [Cairo 23]
6. The area of the rectangle with 3 cm wide and 9 cm long equals _____ cm^2

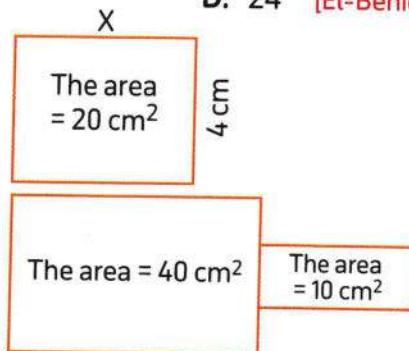
7. If the area of the opposite figure equals 25 m^2 , then the value of x is _____ m

8. The area of the opposite figure equals _____ m^2



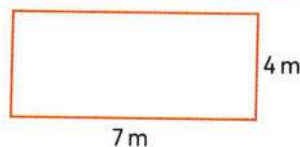
3. Choose the correct answer.

- The area of a rectangle whose length is 7 cm and its width is 5 cm equals _____ cm^2
A. 12 B. 24 C. 35 D. 30 [Souhag 23]
- The perimeter of the square whose side length is 6 cm is _____ cm [Giza - Abo El-Nomros 23]
A. 8 B. 12 C. 36 D. 24
- A rectangle its length is 8 cm and its width is 2 cm, then its perimeter = _____ cm
A. 20 B. 16 C. 10 D. 24 [El-Behiera 23]
- In the opposite figure : The value of x is _____ cm
A. 80 B. 2 C. 6 D. 5
- The area of the opposite figure equals _____ cm^2
A. 30 B. 50 C. 400 D. 100
- Area of square = side length $\times$ _____
A. length B. width C. itself D. 4
- Area of rectangle equals _____ [El-Monofia 24]
A. $2l + w$ B. $2 \times [l + w]$ C. $l \times w$ D. $l + w$



4. Answer the following.

1. Find the area of the opposite figure.



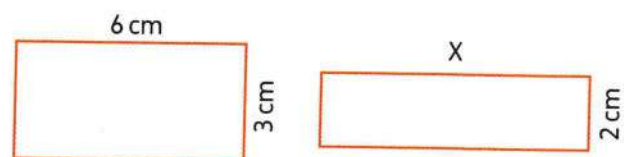
[El-Monofia 24]

2. Find the perimeter and the area of a square whose side length is 7 m

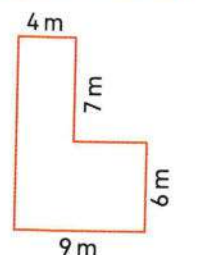
[Giza 24]

3. These two rectangles have the same area.

Find the length of the second rectangle.



4. Wael wants to place a wooden fence around his vegetable garden.
Each meter of fencing costs 10 L.E.
Find the cost of the new fence.



THEME TWO

UNIT 5

Mathematical Operations and Algebraic Thinking

Multiplication as a Relationship

► Concept 1 :

Multiplicative Comparisons

► Concept 2 :

Properties and Patterns of Multiplication



CONCEPT

1

Multiplicative Comparisons



► Lesson 1

Multiplicative Comparison

Learning Objectives:

- Students will define multiplicative comparison.
- Students will model multiplicative comparison problems.

► Lessons 2&3

Creating Multiplicative Comparison Equations

Solving Multiplicative Comparison Equations

Learning Objectives:

- Students will create equations to represent multiplicative comparison problems.
- Students will use letters to represent unknown quantities in equations.
- Students will create and solve multiplicative comparison equations.

Fast Fact

An adult grasshopper can jump **10 times its length straight into the air** and **20 times its length horizontally** without using its wings. That is, if a grasshopper is 5 centimeters long, it can jump a distance of 1 meter.

Lesson

1

Multiplicative Comparison

Learn

What is multiplicative comparison ?

Multiplicative comparison means comparing two things or sets that need multiplication.

For Example : In a birthday party,

Amgad has 3 balloons	Bassem has 6 balloons
	

You can use multiplication as a way to compare between what they have as follows :

Tape diagram	Multiplicative comparison statement	Multiplication equation
Amgad : 3 balloons Bassem : 3 balloons 3 balloons	Bassem has twice as many balloons as Amgad has. Or 6 is two times the number 3	$6 = 2 \times 3$



Remember

Multiplication is repeated addition.

So, you can rewrite a multiplication equation as repeated addition equation.

$$6 = 2 \times 3 \quad \Rightarrow \quad 3 + 3 = 6$$

Hint

$6 = 2 \times 3$ means

6 is two times the number 3

3

3

Or 6 is three times the number 2

2

2

2

Notes for parents :

- Make sure your child understands that the "tapes" in the tape diagram represent equal groups. When constructing a tape diagram, each tape should represent the same quantity.

Example 1

Complete the multiplicative comparison statements. Use tape diagram or multiplication facts to compare.

- a. Compare 15 and 5. 15 is _____ times the number 5.
 b. Compare 50 and 10. 50 is _____ times the number 10.

Solution 

- a. 3 [think:

5	5	5
---	---	---

, $15 = 3 \times 5$] b. 5 [think:

10	10	10	10	10
----	----	----	----	----

, $50 = 5 \times 10$]

Example 2

Rewrite each equation using multiplication.

- a. $5 + 5 + 5 = 15$ b. $3 + 3 + 3 + 3 + 3 + 3 + 3 = 21$

Solution 

- a. $3 \times 5 = 15$ b. $7 \times 3 = 21$

Example 3

Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.

- a.

8	8	8	8	8	8
---	---	---	---	---	---

 _____ is _____ times the number 8.
- b.

5	5	5	5	5	5	5	5
---	---	---	---	---	---	---	---

 _____ is _____ times the number 5.

Solution 

- a. 48 is 6 times the number 8. b. 40 is 8 times the number 5.

Check your understanding

Complete the table. Write a comparison statement or a multiplication equation.

Comparison Statement	Multiplication Equation
21 days is 3 times as many as 7 days	
	$36 = 9 \times 4$
30 fish is 5 times as many as 6 fish.	

• Children often confuse multiplicative comparison with additive comparison. For example, instead of multiplying by 4 to find a number 4 times the number 20, they might add 4.

Exercise

21

on lesson 1

Multiplicative Comparison

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Complete each of the following.

a. $7 + 7 + 7 + 7 + 7 = \text{————} \times \text{————} = \text{————}$

[Alex. 23]

b. $4 + 4 + 4 + 4 = \text{————} \times \text{————} = \text{————}$

[Giza 24]

c. $8 + 8 = \text{————} \times \text{————} = \text{————}$

d. $3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 = \text{————} \times \text{————} = \text{————}$

e. $2 + 2 + 2 + 2 + 2 + 2 = 2 \times \text{————} = \text{————}$

f. $5 + 5 + 5 = 5 \times \text{————}$

[Cairo 24]

2. Rewrite each equation using multiplication.

a. $6 + 6 + 6 = 18$ —————

b. $2 + 2 + 2 + 2 + 2 + 2 + 2 = 14$ —————

c. $5 + 5 + 5 + 5 + 5 = 25$ —————

d. $2 + 2 + 2 + 2 = 8$ —————

e. $9 + 9 + 9 + 9 = 36$ —————

f. The multiplication equation represents $8 + 8 + 8 + 8 = 32$ is ————— $\times$ ————— = —————

[Giza 24]

g. Multiplicative equation of $8 + 8 + 8 + 8 + 8 = 40$ is —————

[Ismaillia 23]

h. Multiplicative equation of $5 + 5 + 5 + 5 + 5 = 25$ is —————

i. Multiplicative equation of $9 + 9 + 9 + 9 + 9 + 9 = 54$ is —————

3. Use tape diagram or multiplication facts to compare the numbers.

a.  Compare 15 and 3. 15 is ————— times the number 3.

b.  Compare 28 and 7. 28 is ————— times the number 7.

c.  Compare 27 and 9. 27 is ————— times the number 9.

d.  Compare 10 and 2. 10 is ————— times the number 2.

- e. Compare 12 and 3. 12 is _____ times the number 3.
- f. Compare 18 and 6. 18 is _____ times the number 6.
- g. Compare 24 and 6. 24 is _____ times the number 6.
- h. Compare 35 and 7. 35 is _____ times the number 7.
- i. 45 equals 5 times _____
- j. 18 is 6 times as many as _____
- k. The number _____ is 7 times as many as number 8.
- l. The number 36 is 4 times as many as the number _____
- m. The number 36 is 9 times as many as the number _____
- n. 28 is _____ times the number 7
- o. 12 is 6 times the number _____

[El-Menia 24]

[Cairo 24]

[Alex. 24]

[Alex. 24]

[Alex. 24]

[El-Monofia - Sadat City 23]

4. Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.

a.

5	5	5	5
---	---	---	---

_____ is _____ times the number 5.

b.

8	8	8
---	---	---

_____ is _____ times the number 8.

c.

3	3	3	3	3	3	3	3
---	---	---	---	---	---	---	---

_____ is _____ times the number 3.

d.

6	6	6	6	6	6	6	6
---	---	---	---	---	---	---	---

_____ is _____ times the number 6.

Challenge

- 5.** Hanan has 40 photos. She has 5 times as many photos as Hany.

How many photos does Hany have?

Hany

?

Hanan

?	?	?	?	?
---	---	---	---	---

40



Multiple Choice Questions

Choose the correct answer.

1. $5 + 5 + 5 = 5 \times$ _____ [Alex. 24]

- A. 3
- B. 24
- C. 30
- D. 8

2. 27 is _____ times of number 9 [Ismailia 24]

- A. 3
- B. 18
- C. 4
- D. 243

3. 45 is _____ times the number 5.
[El-Menia 24] [Giza 23] [Sharkia 22]

- A. 9
- B. 6
- C. 5
- D. 40

4. 56 is _____ times the number 7
[El-Monofia 24]

- A. 5
- B. 6
- C. 7
- D. 8

5. The number _____ equals 6 times 4.
[Giza 23]

- A. 10
- B. 2
- C. 24
- D. 12

6. The number 40 equals 5 times the
number _____ [El-Monofia 24] [Souhag 23]

- A. 4
- B. 5
- C. 6
- D. 8

7. The number 42 is 6 times the number _____
[Alex. 24] [Giza 23]

- A. 7
- B. 9
- C. 8
- D. 5

8. The number 15 equals 3 times the number _____
[El-Menia 23]

- A. 4
- B. 5
- C. 6
- D. 7

9. 18 is equal to 6 times the number _____
[Aswan 23]

- A. 2
- B. 3
- C. 6
- D. 9

10. 3 times the number 7 is _____
[El-Menia 24] [El-Monofia 24]

- A. 7
- B. 14
- C. 21
- D. 28

11. 5 times the number 3 is _____
[Cairo 24]

- A. 10
- B. 15
- C. 20
- D. 25

12. 10 times the number 430 is _____
[Cairo - Heliopolis 23] [El-Kalyoubia 22]

- A. 430
- B. 4,300
- C. 43,00
- D. 430,000

13. The multiplicative comparison statement
for $\boxed{7} \boxed{7} \boxed{7}$ _____ is 3 times the number 7
[El-Monofia 24]

- A. 37
- B. 21
- C. 24
- D. 14

14. The multiplication equation of
 $5 + 5 + 5 + 5 = 20$ is _____

- A. $2 \times 10 = 20$
- B. $4 \times 5 = 20$
- C. $20 \times 1 = 20$
- D. $10 + 10 = 20$

Lessons 2 & 3

- ▶ Creating Multiplicative Comparison Equations
- ▶ Solving Multiplicative Comparison Equations

Learn

During Emad's visit to the Zoo, he read this information.

Can you help him to calculate the tall of the giraffe?

Read and Understand

What do you know?

- The kangaroo is 2 m tall.
- The giraffe is 3 time as tall as the kangaroo

What are you trying to find?

Find how tall is the giraffe.

Plan and Solve

What strategy will you use?

Strategy: Write a multiplicative comparison equation

1. Use a letter to represent the unknown.
Let the tall of the giraffe be x .
2. The giraffe is 3 times as tall as the kangaroo means, x is 3 times 2

Kangaroo's tall

2 m

Giraffe's tall

2 m

2 m

2 m

x

Comparison
bar model

3. Write an equation : $x = 3 \times 2$

4. Solve the equation : $x = 6$

So, the giraffe is 6 m tall.

Notes for parents :

- **Common Error** : Your child may incorrectly place the unknown in an equation. For example, if your child is asked to write 12 is 3 times the number a , he/she may write $12 \times 3 = a$, instead of $12 = 3 \times a$ or $3 \times a = 12$

Example 1

Write an equation based on the comparison statement.

Use a letter to represent the unknown.

a. 3 times the number 5 is _____

b. 12 is 6 times as many as _____

Solution 

a. $3 \times 5 = a$

b. $12 = 6 \times m$

How to solve multiplication comparison equation ?

You know that

$$\begin{array}{ccccc} 6 & = & 3 & \times & 2 \\ \downarrow & & \downarrow & & \downarrow \\ \text{Product} & & \text{Factor} & & \text{Factor} \end{array}$$

- Solving an equation means to find the value of the unknown that makes the equation true.

1. If the unknown is the **product**, use **multiplication**.

$$\begin{array}{ccccc} m & = & 3 & \times & 2 \\ \text{Product} & & \text{Factor} & & \text{Factor} \end{array}$$

Multiply: $m = 6$

2. If the unknown is **one of the two factors**, use **division**.

$$\begin{array}{ccccc} 6 & = & m & \times & 2 \\ \text{Product} & & \text{Factor} & & \text{Factor} \end{array}$$

Divide: $m = 6 \div 2 = 3$

Example 2

Write an equation for each of the following comparisons and then solve it.

a. What number is 3 times the number 7 ?

b. 24 is 4 times a number. What is this number ?

c. 12 is 3 times a number. What is this number ?

Notes for parents :

- It is important to note that the unknown can be in different positions in the equation. Explain that to solve an equation, you find what the unknown number is.

Solution

a. Equation : $3 \times 7 = m$

Answer : $m = 21$

The number is **21**

b. Equation : $24 = 4 \times h$

Answer : $h = 24 \div 4 = 6$

The number is **6**

c. Equation : $12 = 3 \times a$

Answer : $a = 12 \div 3 = 4$

The number is **4****Example 3**

Write an equation for the following comparison and then solve.

Wael ate 5 figs in the evening. His older brother ate 4 times as Wael ate.

How many figs did his brother eat ?**Solution**

Let the number of figs of his brother be a.

• Equation : $a = 4 \times 5$

• Answer : $a = 20$

His brother ate 20 figs.

**Example 4**There were thirty-five adults in line at a movie theater. That is seven times the number of children in another line. **How many children were in this line ?****Solution**

Let the number of children be n. Then, 35 equals 7 times n

• Equation : $35 = 7 \times n$

• Use division to solve : $n = 35 \div 7 = 5$

So, the number of children in the line is 5 children.

**Check** your understanding**1. Solve each of the following equations.**

a. $x = 3 \times 6$

b. $14 = 7 \times n$

c. $6 \times y = 24$

2. Write an equation to represent the situation below, and then solve.

Farmer Wael has 20 sheep. He has twice the number of sheep as farmer Sameh.

What is the number of sheep of farmer Sameh ?

- Explain that the missing number in an equation is represented by a blank, but we can use letters to represent missing numbers.

Exercise

22

on lessons 2&3

- Creating Multiplicative Comparison Equations
- Solving Multiplicative Comparison Equations

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Write an equation based on the comparison statement. Use a letter to represent the unknown number. You do not have to solve the equations.

- 7 times the number 2 is _____
- 2 times the number 7 is _____
- 18 is 6 times as many as _____
- 4 times the number 3 is _____
- 24 is 4 times as many as _____
- 25 is 5 times as many as _____
- 30 is 5 times as many as _____
- 7 times as many as 4 is _____
- 6 times the number _____ is 48.
- 27 is _____ times the number 9.
- 6 is _____ times the number 2.
- 8 times the number _____ is 24.
- 5 times the number _____ is 15.



2. Solve each of the following.

a. $y = 5 \times 10$

b. $a \times 3 = 15$

c. $7 \times b = 21$

d. $3 \times 4 = x$

e. $5 \times b = 50$

f. $m \times 4 = 16$

g. $z = 5 \times 1$

h. $n \times 2 = 18$

i. $5 \times k = 35$

3. Write an equation for the comparisons. Use a letter to represent the unknown number.
 You do not have to solve the equations.

- a. Nadia collected 5 marbles in March. By May she had 4 times as many marbles. How many marbles does Nadia have in May ?



- b. Hamed had 12 cookies, which was 3 times as many cookies as his brother Ahmed. How many cookies did Ahmed have ?



- c. It took Aida 21 minutes to walk to school on Monday. On Tuesday, it took her 7 minutes to ride her bike to school. How many times as many was riding her bike as walking ?



- d. Menna ran around the soccer field 4 times. Aya ran around the field twice as many times as Menna. How many times did Aya run around the field ?



- e. Rana has 6 mangoes. Her brother Sherif has 18. How many times of mangoes does Sherif have ?



- f. A restaurant sold eight times as many salads as they sold steaks. If they sold four steaks, how many salads did they sell ?



- g. A pet store sold two cats. They sold six times as many dogs as they sold cats. How many dogs did they sell ?



4. Write an equation for each of the following comparisons, and then solve it.

- a. What number is 5 times the number 6 ?

- b. 36 is 4 times a number. What is this number ?

- c. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat ?

[Giza - 6th October 22]



- d. Mona sent twenty-five text messages a day. Esslam sent five a day. How many times as many texts did Mona send than Esslam sent ?



- e. It takes Wael six oranges to make a small glass of orange juice. He uses eight times as many for a large glass. How many oranges does he use for a large glass ?



- f. Nora had four times as many Pounds as her sister. Her sister has three Pounds. How much money does Nora have ?



5. 

How Many Seats ? Use the information in the table to compare numbers of seats in different modes of transportation. Then, enter and solve an equation for each comparison.

Means of Transportation	Number of Seats
Bike	1
Motorcycle	2
Car	4
Truck	6
Bus	36
Metro Train	48

a. How many times as many seats are in a truck than on a motorbike ?

Equation : _____

Answer : _____

b. How many times as many seats are on a bus than in a truck ?

Equation : _____

Answer : _____

c. How many times as many seats are on the metro train than in a car ?

Equation : _____

Answer : _____

d. A metro train can fit how many times as many people as a truck ?

Equation : _____

Answer : _____

e. A bus has how many times as many seats as a car ?

Equation : _____

Answer : _____

Challenge

6. Bassem sold 9 chocolate bars. Marwan sold three times as many as Bassem. Esslam sold 9 fewer than Marwan. How many bars did Esslam sell ?

Multiple Choice Questions

Choose the correct answer.

1. If $n \times 3 = 18$, then $n =$ _____ [Cairo 24]

- A. 4 B. 3
C. 5 D. 6

2. If $6 \times b = 42$, then $b =$ _____ [Beni Suef 24]

- A. 8 B. 5
C. 6 D. 7

3. If $8 \times M = 40$, then $M =$ _____ [Giza 24]

- A. 6 B. 5
C. 10 D. 12

4. If $A \times 12 = 36$, then $A =$ _____ [Cairo 24]

- A. 2 B. 3
C. 4 D. 5

5. What number is 10 times the number 13 ?

- A. 130 B. 3
C. 23 D. 1,300

6. There are 4 bicycles on a road, and 14 times as many cars as bicycles. How many cars are on the road ? [Suez 22]

- A. 46 B. 14
C. 56 D. 18

7. The equation based on the comparison statement «3 times the number 7» is _____

- A. $3 \times 7 = A$ B. $7 - 3 = A$
C. $3 + 7 = A$ D. $7 \div 3 = A$

8. The equation based on the comparison statement «45 is a times the number 9» is _____

- A. $45 = 9 - a$ B. $45 = a \times 9$
C. $45 = a + 9$ D. $45 = 9 - a$

9. There were 24 adults and 3 children in line at a movie theater. How many times the adults were in the line as the children ?

- A. 28 B. 36
C. 7 D. 8

10. Noha sent 18 text messages a day. Ali sent 3 a day. How many times as many texts did Noha send as Ali ?

- A. 5 B. 4
C. 3 D. 6

11. Hanan has 5 L.E. , and Mohamed has 50 L.E., then the money with Mohamed = _____ times the money with Hanan. [Cairo - El-Salam 23]

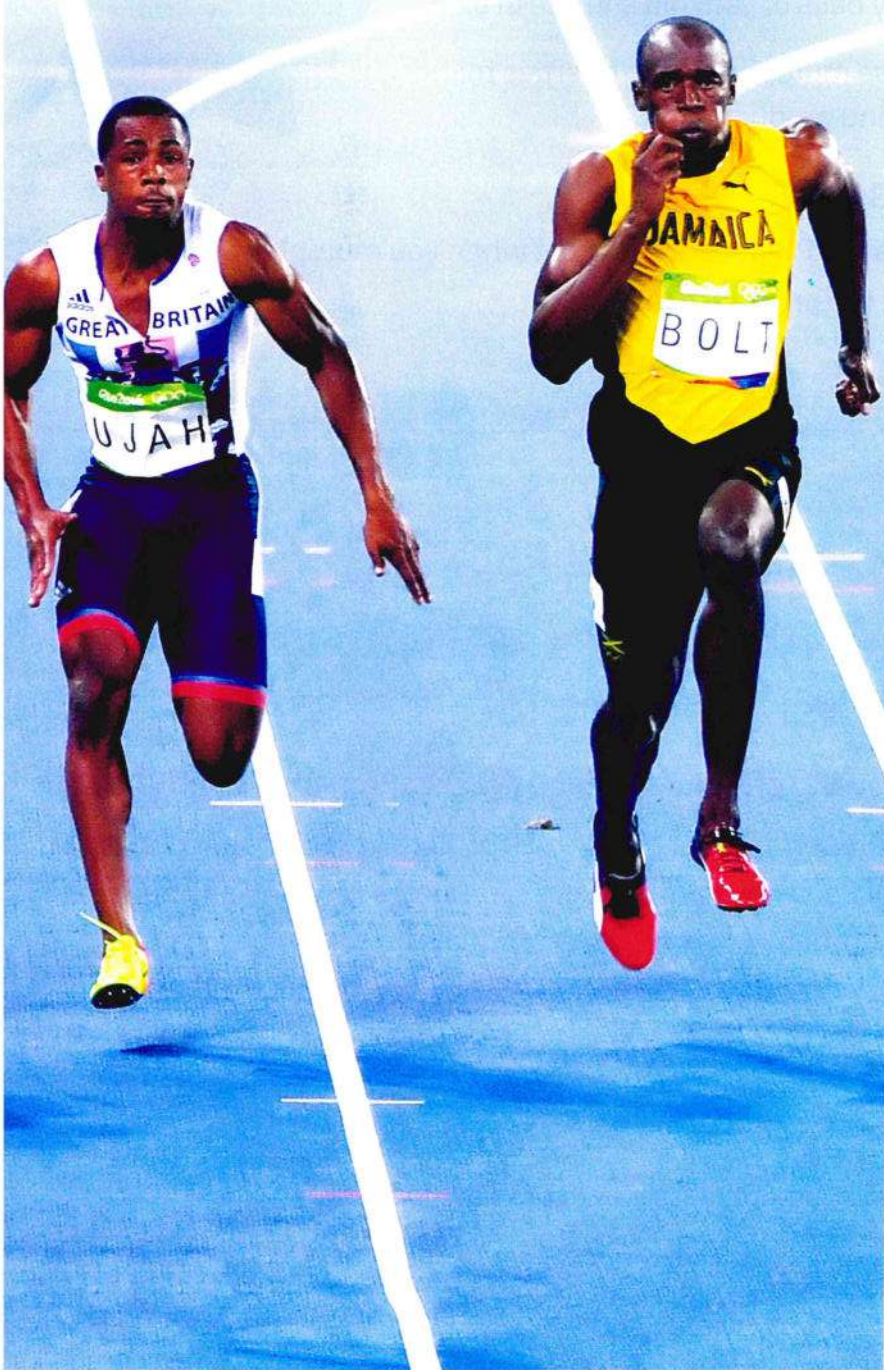
- A. 3 B. 10 C. 300 D. 3,000

12. Hany is twice as old as his brother. His brother is 8 years old. Which equation can be used to find Hany's age ?

- A. $2 + a = 8$ B. $2 \times a = 8$ C. $2 \times 8 = a$ D. $8 + 2 = a$

CONCEPT 2

Properties and Patterns of Multiplication



► Lessons 4&5

Commutative Property of Multiplication
Identity Property and the Zero Property

Learning Objectives:

- Students will explain the Commutative Property of Multiplication.
- Students will apply the Commutative Property of Multiplication to solve problems.
- Students will apply the Identity Property of Multiplication to solve problems.
- Students will apply the Zero Property of Multiplication to solve problems.
- Students will identify patterns that occur when multiplying by 10, 100, and 1,000.

► Lessons 6&7

Associative Property of Multiplication
Applying Patterns in Multiplication

Learning Objectives:

- Students will explain the Associative Property of Multiplication.
- Students will apply the Associative Property of Multiplication to solve problems.
- Students will apply decomposing and the Associative Property of Multiplication to solve equations with multiples of 10, 100, or 1,000.

Fast Fact

The fastest man in the world is Usain Bolt. He can run about 44 kilometers per hour for short distances. One of the fastest cars in the world in 2017 was driven to an average speed 10 times faster than Usain Bolt.

How fast can this car move ?

Lessons 4 & 5

- ▶ Commutative Property of Multiplication
- ▶ Identity Property and the Zero Property

Learn 1 Multiplication properties

Multiplication properties are rules for multiplication that are always true. In this lesson, you will learn three properties of multiplication.

- Commutative Property.
- Identity Property.
- Zero Property.

1 Commutative Property of Multiplication

Natalie knit 3 scarves. She used 2 balls of yarn for each scarf.

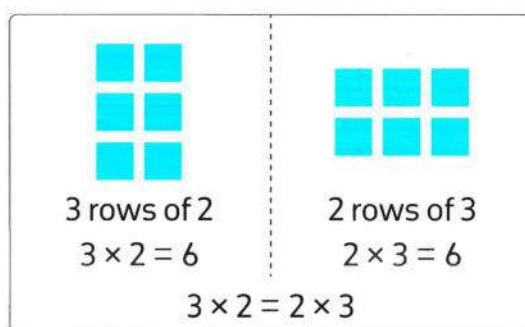
How many balls of yarn did she use in all ?

You can use multiplication properties to help you find products.



Multiply 3×2

Commutative Property states that when you multiply two factors in any order the product is the same.



So, Natalie used 6 balls of yarn.

2 Identity Property of Multiplication

The **Identity Property** states that the product of 1 and any number equals that number.

For Example :

- $3 \times 1 = 3$
- $548 \times 1 = 548$
- $1 \times 27 = 27$

3 Zero Property of Multiplication

The **Zero Property** states that the product of zero and any number equals 0.

For Example :

- $4 \times 0 = 0$
- $217 \times 0 = 0$
- $0 \times 13 = 0$

Notes for parents :

- Using multiplication properties makes finding products easier.

Example 1

Complete each of the following.

a. $3 \times 8 = \underline{\hspace{2cm}} \times 3$

c. $\underline{\hspace{2cm}} \times 5 = 5 \times 9$

e. $15 \times 1 = \underline{\hspace{2cm}}$

g. $170 \times \underline{\hspace{2cm}} = 0$

b. $10 \times \underline{\hspace{2cm}} = 7 \times 10$

d. $2 \times 11 = 11 \times \underline{\hspace{2cm}}$

f. $5 \times 0 = \underline{\hspace{2cm}}$

h. $\underline{\hspace{2cm}} \times 350 = 350$

Solution

a. 8

b. 7

c. 9

d. 2

e. 15

f. 0

g. 0

h. 1

Example 2

Mr. Hany has 12 pens.

Write an equation using the Commutative Property of Multiplication to describe two ways he can arrange his pens.

Solution

• $3 \times 4 = 4 \times 3 = 12$

• $2 \times 6 = 6 \times 2 = 12$

**Check** your understanding

Find the missing number. Name the property you used.

a. $\square \times 1 = 12$ []

b. $9 \times \square = 0$ []

c. $5 \times 6 = \square \times 5$ []

d. $\square \times 500 = 0$ []

e. $1 \times \square = 708$ []

f. $2 \times \square = 10 \times 2$ []



- You may wish to ask your child questions such as the following as you observe your child at work :
 - When you multiply by 1, which number is the product ?
 - When you multiply any number by 0, which number is the product ?

Learn 2 Multiplying by 10 , 100 and 1,000

You can use a **basic fact** and a **pattern** to find the product.

TH	H	T	O
			4
		4	0
	4	0	0
4	0	0	0

$4 \times 1 = 4$

[Think : Use the basic fact $4 \times 1 = 4$]

$4 \times 10 = 40$

[Put 1 zero at the end]

$4 \times 100 = 400$

[Put 2 zeroes at the end]

$4 \times 1,000 = 4,000$

[Put 3 zeroes at the end]

Notice the pattern of zeroes.

Example 3

Fill in the blanks below.

a. $6 \times 10 =$ _____

b. $2 \times 100 =$ _____

c. $7 \times 1,000 =$ _____

d. $21 \times 10 =$ _____

e. $50 \times 10 =$ _____

f. $80 \times 100 =$ _____

g. $90 = 9 \times$ _____

h. $170 =$ _____ $\times 17$

i. _____ $\times 1,000 = 50,000$

Solution 

a. 60

b. 200

c. 7,000

d. 210

e. 500

f. 8,000

g. 10

h. 10

i. 50

 **Check** your understanding

Complete each of the following.

a. $1,000 \times 5 =$ _____

b. _____ $= 100 \times 1$

c. $30 \times 10 =$ _____

d. $800 = 8 \times$ _____

e. $190 =$ _____ $\times 19$

f. $20,000 =$ _____ $\times 1,000$

Notes for parents :

- Let your child discover the pattern of zeroes when he/she multiply by 10 , 100 and 1,000.

Exercise 23

on lessons 4&5

- Commutative Property of Multiplication
- Identity Property and the Zero Property

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Apply the Commutative Property of Multiplication to complete each equation.

a. $5 \times 7 = \underline{\hspace{2cm}} \times 5$

c. $25 \times 52 = 52 \times \underline{\hspace{2cm}}$ [Matrouh 22]

e. $\underline{\hspace{2cm}} \times 15 = 15 \times 11$

g. If $34 \times B = 15 \times 34$, then $B = \underline{\hspace{2cm}}$

i. $4 \times \underline{\hspace{2cm}} = 5 \times \underline{\hspace{2cm}}$

b. $20 \times \underline{\hspace{2cm}} = 6 \times 20$

d. $48 \times 12 = 12 \times \underline{\hspace{2cm}}$ [Souhag 22]

f. If $A \times 27 = 27 \times 25$, then $A = \underline{\hspace{2cm}}$ [Souhag 24]

h. $\underline{\hspace{2cm}} \times 3 = \underline{\hspace{2cm}} \times 9$

j. $0 \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \times 0$

2. Apply the Commutative Property of Multiplication to find the unknown value.

a. $33 \times 4 = 4 \times a \underline{\hspace{2cm}}$

c. $a \times 7 = 7 \times 8 \underline{\hspace{2cm}}$

e. $16 \times a = 7 \times 16 \underline{\hspace{2cm}}$

g. $16 \times k = 11 \times 16 \underline{\hspace{2cm}}$

i. $4 \times n = 7 \times 4 \underline{\hspace{2cm}}$

b. $b \times 9 = 9 \times 8 \underline{\hspace{2cm}}$

d. $5 \times 9 = 9 \times b \underline{\hspace{2cm}}$

f. $5 \times 93 = b \times 5 \underline{\hspace{2cm}}$

h. $3 \times m = 100 \times 3 \underline{\hspace{2cm}}$

j. $1 \times 4 = 4 \times a \underline{\hspace{2cm}}$

3. Solve each of the following.

a. $\text{book icon } 5 \times 1$

d. $\text{book icon } 8 \times 0$

g. 758×0 [Port Said 24]

b. $\text{book icon } 12 \times 1$

e. $\text{book icon } 16 \times 0$

h. 1×356

c. $\text{book icon } 672 \times 1$

f. $\text{book icon } 758 \times 0$

i. 0×187 [Port Said 24]

4. Complete each of the following.

a. $8 \times 10 = \underline{\hspace{2cm}}$

d. $\underline{\hspace{2cm}} = 1,000 \times 2$

g. $19,000 = \underline{\hspace{2cm}} \times 19$

i. $123 \times 100 = \underline{\hspace{2cm}}$ [Giza 23]

b. $100 \times 5 = \underline{\hspace{2cm}}$

e. $700 = 7 \times \underline{\hspace{2cm}}$

h. $\underline{\hspace{2cm}} \times 245 = 24,500$ [Cairo 24] [Cairo - El-Tebbeen 22]

j. If $a \times 5 = 500$, then $a = \underline{\hspace{2cm}}$ [El - Menia 24]

c. $3 \times 1,000 = \underline{\hspace{2cm}}$

f. $93 \times \underline{\hspace{2cm}} = 9,300$
[Alex. 24]

Story Problems

5.  There are 42 people who want to play football. Badr says that you can make 6 teams with 7 people on each team. Salma says you can make 7 teams with 6 people on each team. Who is correct? Use numbers, words, and pictures to explain your thinking.

6. Mr. Saleh has 24 beans. Write an equation using the commutative property of multiplication to describe two ways he can arrange his beans.

7. Bassem has 20 apples. Write an equation using the commutative property of multiplication to describe two ways he can arrange the apples.



8.  Ahmed has 48 toy cars and wants to display them in his room. He wants to arrange them in equal rows and equal columns. How can he display his cars? Draw your solution.



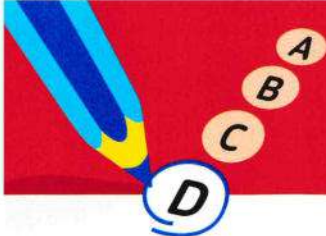
9.  **Writing About Math** Tarek says that $9 \times 1,000$ equals 900. What would you tell Tarek to help correct his mathematical thinking? Use words, numbers, or pictures to explain your thinking.



Challenge

10. Find the value of a and b.

- a. $52 \times a = a \times 73$
b. $112 \times a = 19 \times b$



Multiple Choice Questions

Choose the correct answer.

- | | |
|--|--|
| <p>1. $24 \times 15 = 15 \times 24$ represents the _____ property. [El-Beheira 24] [El-Monofia 24] [Cairo 24]</p> <p>A. associative
B. commutative
C. identity
D. distributive</p> | <p>2. $17 \times 1 = 17$ is _____ property. [El-Menia 24]</p> <p>A. distributive
B. associative
C. commutative
D. multiplicative identity</p> |
| <p>3. $600 \times 3 = 3 \times$ _____ [Cairo - El Shrouk 23]</p> <p>A. 300
B. 400
C. 500
D. 600</p> | <p>4. $35 \times 0 =$ _____ [Cairo - El-Nozha 23] [Giza 23]</p> <p>A. 1
B. 34
C. 0
D. 43</p> |
| <p>5. $1 \times 15 =$ _____ [Beni Suef 24]</p> <p>A. 1
B. 0
C. 15
D. 16</p> | <p>6. The Multiplicative Identity Element is _____ [Cairo - El-Shrouk 23] [Giza 24]</p> <p>A. 1
B. 2
C. 3
D. 4</p> |
| <p>7. If $3 \times X = 100 \times 3$, then $X =$ _____ [Cairo 24]</p> <p>A. 10
B. 100
C. 1000
D. 10,000</p> | <p>8. If $a \times 4 = 4 \times 2$, then $a =$ _____ [Giza 23]</p> <p>A. 8
B. 4
C. 2
D. 6</p> |
| <p>9. If $850 \times m = 850$, then $m =$ _____ [Ismailia 23]</p> <p>A. 1
B. 850
C. 2
D. 0</p> | <p>10. $34 \times$ _____ $= 3,400$ [Alex. 23]</p> <p>A. 1
B. 10
C. 100
D. 1,000</p> |
| <p>11. 100,000 is _____ times the number 10,000 [Ismailia 23]</p> <p>A. 10
B. 100
C. 1,000
D. 10,000</p> | <p>12. $51 \times 100 =$ _____</p> <p>A. 5,100
B. 510
C. 51,000
D. 0</p> |
| <p>13. Which equation would be best to include in an explanation of the commutative property of multiplication? [El-Monofia 24]</p> <p>A. $5 \times 1 = 5$
B. $3 \times 2 = 2 \times 3$
C. $8 \times 0 = 0$
D. $3 + 0 = 3$</p> | |
| <p>14. Determine which choice best shows the Identity Property of Multiplication.</p> <p>A. $0 \times 6 = 0$
B. $1 \times 6 = 6$
C. $1 \times 6 = 6 \times 1$
D. $2 \times 6 = 6 \times 2$</p> | |

- ▶ Associative Property of Multiplication
- ▶ Applying Patterns in Multiplication

Learn 1 Associative property of multiplication

Suppose you make Super Cheesy Sandwiches for 4 people. Each person gets 2 sandwiches. Each sandwich has 2 slices of cheese. How many slices of cheese will you need? Here are some ways to find the product of $4 \times 2 \times 2$.



Associative Property of Multiplication

Associative Property states that when you group factors in different ways, the product is the same.

Use parentheses to group the factors you multiply first.



$$\begin{aligned} & (4 \times 2) \times 2 \\ & \quad \downarrow \\ & 8 \times 2 = 16 \end{aligned}$$



$$\begin{aligned} & 4 \times (2 \times 2) \\ & \quad \downarrow \\ & 4 \times 4 = 16 \end{aligned}$$

$$\text{So, } (4 \times 2) \times 2 = 4 \times (2 \times 2)$$

Example 1

Use the grouping or Associative Property of Multiplication and complete.

a. $(6 \times 2) \times 5 = 6 \times [\quad \times 5]$

b. $(20 \times \quad) \times 10 = 20 \times [15 \times 10]$

c. $7 \times [5 \times 2] = [7 \times \quad] \times 2$

d. $315 \times [16 \times 120] = [\quad \times \quad] \times 120$

Solution

a. $(6 \times 2) \times 5 = 6 \times [2 \times 5]$

b. $(20 \times 15) \times 10 = 20 \times [15 \times 10]$

c. $7 \times [5 \times 2] = [7 \times 5] \times 2$

d. $315 \times [16 \times 120] = [315 \times 16] \times 120$

Notes for parents :

- Your child may forget to multiply by the third factor.

To check, ask your child to group the factors in a different way and multiply again.

Example 2

Solve each problem. Multiply the part in the parentheses first.

a. $(3 \times 2) \times 9$

b. $10 \times (5 \times 3)$

Solution 

a. $(3 \times 2) \times 9 = 6 \times 9 = 54$

b. $10 \times (5 \times 3) = 10 \times 15 = 150$

Example 3

Place parentheses to show one way to find the product.

Then show another way to use parentheses to find the product.

a. $3 \times 2 \times 5$

b. $4 \times 10 \times 2$

Hint

If there are no parentheses, you can choose which pair of numbers to multiply first.

Solution 

$$\begin{aligned} \text{a. } 3 \times 2 \times 5 &= (3 \times 2) \times 5 \\ &= 6 \times 5 = 30 \end{aligned}$$

$$\begin{aligned} \text{Or } 3 \times 2 \times 5 &= 3 \times (2 \times 5) \\ &= 3 \times 10 = 30 \end{aligned}$$

$$\begin{aligned} \text{b. } 4 \times 10 \times 2 &= (4 \times 10) \times 2 \\ &= 40 \times 2 = 80 \end{aligned}$$

$$\begin{aligned} \text{Or } 4 \times 10 \times 2 &= 4 \times (10 \times 2) \\ &= 4 \times 20 = 80 \end{aligned}$$

Example 4

Apply the Commutative and the Associative Properties of Multiplication to solve the problems.

a. $3 \times 7 \times 2$

b. $4 \times 8 \times 2$

Hint

It is helpful to use Commutative Property to multiply the small factors first.

Solution 

$$\begin{aligned} \text{a. } 3 \times 7 \times 2 &= 3 \times 2 \times 7 \quad [\text{Commutative Property}] \\ &= (3 \times 2) \times 7 \quad [\text{Associative Property}] \\ &= 6 \times 7 = 42 \end{aligned}$$

$$\begin{aligned} \text{b. } 4 \times 8 \times 2 &= 8 \times 4 \times 2 \quad [\text{Commutative Property}] \\ &= 8 \times (4 \times 2) \quad [\text{Associative Property}] \\ &= 8 \times 8 = 64 \end{aligned}$$

 **Check** your understanding

Find each product.

a. $(4 \times 2) \times 6 =$ _____

b. $5 \times (5 \times 2) =$ _____

c. $8 \times 5 \times 2 =$ _____

d. $3 \times 2 \times 8 =$ _____

- After your child has reviewed the Commutative Property of Multiplication, ask him/her to predict whether it would make a difference which two factors they multiplied first in $8 \times 4 \times 2$.

Learn 2 Decomposing and Associative Property of Multiplication

- You have learned before how to multiply by multiples of 10, 100 and 1,000 using a basic fact and a pattern of zeroes.
- Here you will use decomposing and Associative Property to solve problems.

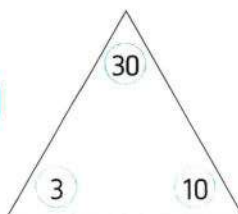
Example 5

Find the product : 8×30

Solution 

$$\begin{aligned}
 8 \times 30 &= 8 \times [3 \times 10] \\
 &= [8 \times 3] \times 10 \\
 &= 24 \times 10 \\
 &= 240
 \end{aligned}$$

[Decompose 30 to 3×10]
[Associative Property]



Another Way

$$\begin{aligned}
 8 \times 30 &= 240 \\
 &\quad \swarrow \searrow \\
 &\quad 24
 \end{aligned}$$

Example 6

Solve using a strategy you prefer.

a. 9×60

b. 600×7

c. $4,000 \times 6$

Solution 

$$\begin{aligned}
 \text{a. } 9 \times 60 &= 540 \\
 &\quad \swarrow \searrow \\
 &\quad 54
 \end{aligned}$$

$$\begin{aligned}
 \text{b. } 600 \times 7 &= 4,200
 \end{aligned}$$

$$\begin{aligned}
 \text{c. } 4,000 \times 6 &= [1,000 \times 4] \times 6 \\
 &= 1,000 \times [4 \times 6] \\
 &= 1,000 \times 24 \\
 &= 24,000
 \end{aligned}$$

 **Check** your understanding

Use decomposing and Associative Property to find each product.

a. $4 \times 40 =$ _____

b. $5 \times 500 =$ _____

c. $2 \times 8,000 =$ _____

Notes for parents :

- The product has the same number of zeroes as the number of zeroes in the factor with zeroes unless the basic fact has a zero.
- Let your child solve using strategy he/she prefers.

Exercise

24

on lessons 6&7

► Associative Property of Multiplication

► Applying Patterns in Multiplication

● REMEMBER

● UNDERSTAND

● APPLY

● PROBLEM SOLVING

From the school book

1. Write the missing number.

a. $[25 \times 5] \times 6 = 25 \times [\quad \times 6]$ [Giza 24]

c. $2 \times [6 \times 5] = [2 \times 6] \times \quad$

e. $5 \times 14 \times 2 = [5 \times \quad] \times 14$

b. $5 \times [10 \times 2] = [5 \times \quad] \times 2$

d. $[3 \times 9] \times 5 = \quad \times [9 \times 5]$

f. $3 \times 6 \times 2 = 6 \times [\quad \times 2]$

2. Solve each problem. Multiply the part in the parentheses first. Show your work.

a. $[2 \times 3] \times 4 = \underline{\hspace{2cm}}$

c. $2 \times [3 \times 4] = \underline{\hspace{2cm}}$

e. $[2 \times 6] \times 3 = \underline{\hspace{2cm}}$

g. $8 \times [6 \times 5] = \underline{\hspace{2cm}}$

b. $[5 \times 2] \times 3 = \underline{\hspace{2cm}}$

d. $5 \times [2 \times 3] = \underline{\hspace{2cm}}$

f. $9 \times [2 \times 3] = \underline{\hspace{2cm}}$

h. $[4 \times 5] \times 7 = \underline{\hspace{2cm}}$

3. Apply the properties of multiplication to solve the problems.

a. $3 \times 2 \times 5 = \underline{\hspace{2cm}}$

c. $2 \times 9 \times 3 = \underline{\hspace{2cm}}$

e. $4 \times 3 \times 7 = \underline{\hspace{2cm}}$

g. $2 \times 5 \times 8 = \underline{\hspace{2cm}}$

i. $3 \times 3 \times 7 = \underline{\hspace{2cm}}$

b. $4 \times 6 \times 2 = \underline{\hspace{2cm}}$

d. $3 \times 2 \times 3 = \underline{\hspace{2cm}}$

f. $4 \times 5 \times 6 = \underline{\hspace{2cm}}$

h. $3 \times 4 \times 5 = \underline{\hspace{2cm}}$

j. $2 \times 2 \times 9 = \underline{\hspace{2cm}}$

4. Place parentheses to show one way to find the product. Then show one other way to use parentheses to find the product.

a. $5 \times 4 \times 2 = \underline{\hspace{2cm}}$

b. $3 \times 6 \times 2 = \underline{\hspace{2cm}}$

c. $2 \times 3 \times 4 = \underline{\hspace{2cm}}$

d. $8 \times 5 \times 10 = \underline{\hspace{2cm}}$

5. Write how many to make up each number as the example.

► **Example:** $40 = \underline{4}$ Tens

a. $30 = \underline{\hspace{2cm}}$ Tens

c. $160 = \underline{\hspace{2cm}}$ Tens

e. $120 = \underline{\hspace{2cm}}$ Tens

g. $600 = \underline{\hspace{2cm}}$ Hundreds

i. $2,000 = \underline{\hspace{2cm}}$ Thousands

b. $80 = \underline{\hspace{2cm}}$ Tens

d. $140 = \underline{\hspace{2cm}}$ Tens

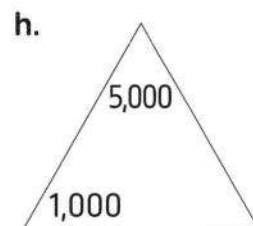
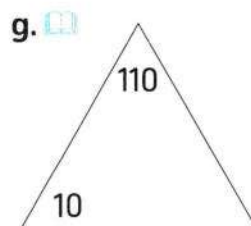
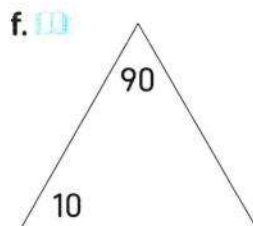
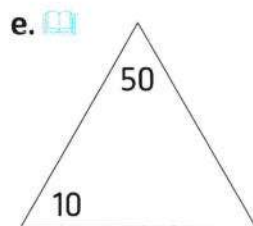
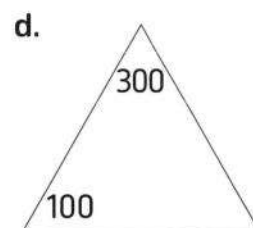
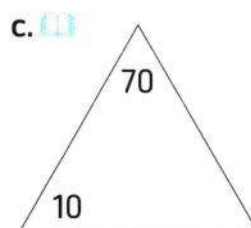
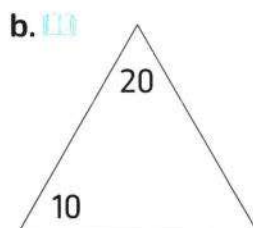
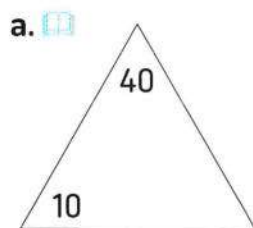
f. $110 = \underline{\hspace{2cm}}$ Tens

h. $5,000 = \underline{\hspace{2cm}}$ Thousands

j. $90 = \underline{\hspace{2cm}}$ Tens

[Alex. - El Montazah 23]

6. Write the missing factor in the box.



7. Multiplying by multiples 10 , 100 and 1,000 Use decomposing and the Associative Property of Multiplication to solve each problem.

a. $7 \times 20 = \underline{\hspace{4cm}}$

b. $5 \times 50 = \underline{\hspace{4cm}}$

c. $4 \times 700 = \underline{\hspace{4cm}}$

d. $3 \times 4,000 = \underline{\hspace{4cm}}$

e. $9 \times 500 = \underline{\hspace{4cm}}$

8. Solve using a strategy you prefer.

a. $200 \times 3 =$ _____ [Cairo - El-Nozha 23]

b. $500 \times 7 =$ _____ [El-Monofia - Sadat City 23]

c. $600 \times 3 =$ _____ [Cairo - El-Shrouk 23]

d. $6 \times 90 =$ _____

e. $7,000 \times 6 =$ _____

f. $600 \times 4 =$ _____

g. $4,000 \times 5 =$ _____

- 9.** Aisha bought 3 packs of water bottles. Each pack had 3 rows of 4 water bottles. How many water bottles did Aisha buy?



- 10.** Hany works 20 hours a week. If he makes L.E. 6 per hour. How much does Hany make in two weeks?



- 11.** Angy runs 2 kilometers a day. If she runs five days a week. How many kilometers does she run in 10 weeks?

- 12.**  Review each student's work. Then, answer the questions.

How is Heba's and Ashraf's work the same?

How are they different? Which student's strategy do you prefer? Why?

Heba's work

$$\begin{aligned} & [4 \times 8] \times 10 \\ &= 32 \times 10 \\ &= 320 \end{aligned}$$

Ashraf's work

$$\begin{aligned} & 4 \times [8 \times 10] \\ &= 4 \times 80 \\ &= 320 \end{aligned}$$

13. Writing about Math

Use what you have learned about the Associative Property of Multiplication to help Farouk solve the problem. Use words and numbers to explain your thinking.

Farouk is trying to solve the problem $2 \times 7 \times 4$

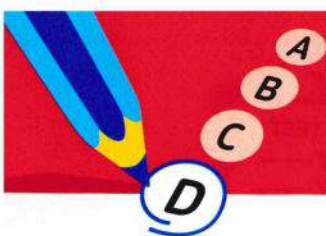
He starts by solving 2×7 and gets 14. Place parentheses to show how Farouk started this problem. $2 \times 7 \times 4$

Next, he writes 14×4 but he does not know how to solve that multiplication problem. Can you show Farouk another way to solve the problem ?

Challenge

14. Marwan's mom gives him L.E. 5 every day for lunch at school. If he only pays L.E. 3 for lunch, how much will he save in 10 weeks if he goes to school five days weekly ?
-





Multiple Choice Questions

Choose the correct answer.

1. Which of the following represents the Associative Property ?

[El-Beheira 23]

A. $11 \times 129 = 129 \times 11$

B. $2 \times [5 \times 3] = [2 \times 5] \times 3$

C. $0 \times 17 = 0$

D. $[2 \times L] + W$

2. The Associative Property applied on $7 \times [8 \times 10]$ is _____

[El-Menia 24]

A. $15 \times 10 = 150$

B. $7 \times 80 = 560$

C. $7 \times 50 = 780$

D. $7 \times 18 = 126$

3. $253 + [226 + 142] = [253 + \text{_____}] + 142$

[Alexandria 23]

A. 253

B. 226

C. 142

D. 368

4. $2 \times [5 \times 4] = [2 \times \text{_____}] \times 4$

[Kafr El-Sheikh 24] [Souhag 23]

A. 2

B. 0

C. 5

D. 4

5. $2 \times 3 \times 4 = \text{_____}$

A. 234

B. 9

C. 24

D. 10

6. $[300 \times 7] \times 0 = \text{_____}$

A. 2,100

B. 3,070

C. zero

D. 307

7. $5,000 \times 2 = \text{_____}$

A. 1,000

B. 2 Thousands

C. 10 Hundreds

D. 10 Thousands

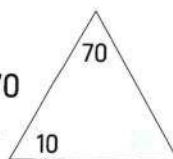
8. The missing factor in the box equals _____

A. 7,000

B. 70

C. 700

D. 7



9. $8,000 = \text{_____}$ Tens

[Giza 23]

A. 800

B. 80,000

C. 80

D. 8

10. $700 = \text{_____}$ Hundreds [Cairo - El-Nozha 23]

A. 7

B. 700

C. 70

D. 7,000

11. Which equation would be best to include in an explanation of the Associative Property of Multiplication ?

[Alexandria - El-Montaza 22]

A. $[9 \times 12] \times 0 = 0$

B. $[3 \times 7] \times 2 = 3 \times [7 \times 2]$

C. $[4 \times 6] \times 1 = 4 \times 6$

D. $[11 \times 8] \times 9 = 9 \times [11 \times 8]$

Unit Five Assessment



1. Choose the correct answer.

1. $7 \times 5 = k \times 7$, then $k =$ _____ [Kafr El-Sheikh 24] [Giza 24]
 A. 5 B. 7 C. 2 D. 35
2. $375 \times$ _____ $= 37,500$
 A. 10 B. 100 C. 1,000 D. 10,000
3. $125 \times 0 =$ _____ [Luxor 24]
 A. 25 B. 205 C. Zero D. 250
4. Which equation would be the best to include in an explanation of the Commutative Property of Multiplication ?
 A. $3 \times 5 = 5 \times 3$ B. $4 \times 16 = [4 \times 11] + [4 \times 5]$
 C. $[6 \times 4] \times 2 = 6 \times [4 \times 2]$ D. $5 \times 1 = 5$
5. Which equation would be the best to include in an explanation of the Associative Property of Multiplication ?
 A. $3 \times 1 = 3$ B. $9 \times 6 = 6 \times 9$
 C. $6 \times [2 \times 4] = [6 \times 2] \times 4$ D. $5 \times 16 = [5 \times 11] + [5 \times 5]$
6. $2 + 2 + 2 + 2 + 2 + 2 = 2 \times$ _____ [Cairo 24]
 A. 2 B. 3 C. 5 D. 6
7. The bar model

3	3	3	3	3
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 represents that the number _____ is 5 times number 3 [Giza - Abo El-Nomros 23]
 A. 8 B. 15 C. 20 D. 30

2. Complete.

1. $4 \times 3 \times 7 = 4 \times$ _____ [Cairo - El-Kobba 22]
2. The multiplicative equation of $8 + 8 + 8 + 8 + 8 = 40$ is _____
3. The Multiplicative Identify Element is _____ [Alexandria - Montaza 22]
4. $3,200 =$ _____ Hundreds
5. $4 \times 7 = 7 \times 4$ _____ Property of Multiplication. [Port Said 22]
6. If $P \times 1 = 63$, then $P =$ _____ [EL-Monofia 24]

7. If $1,000 \times Z = 3,000$, then $Z =$ _____

[Cairo - El-Nozha 23]

8. 7 times as the number 5 = _____

[Cairo - El-Shrouk 23]

3. Choose the correct answer.

1. The number 15 equals 5 times the number _____

[Cairo - Rod El-Farag 23]

A. 4

B. 5

C. 3

D. 15

2. If $X \times 10 = 100$ then $X =$ _____

[Souhag 23]

A. 10

B. 5

C. 15

D. 20

3. $0 \times 216 =$ _____

[Alex. 23]

A. 216

B. 2,160

C. 1

D. 0

4. $13 \times 24 = 24 \times 13$ represents _____ Property.

[Giza 23]

A. Associative

B. Commutative

C. Multiplicative Identity

D. Distribution

5. What is the number that is 10 times the number 18 ?

[El-Menia 23]

A. 28

B. 1,800

C. 180

D. 18

6. If $a \times 4 = 4 \times 2$, then $a =$ _____

[Giza 23]

A. 8

B. 4

C. 2

D. 6

7. $2 \times [7 \times 4] = [2 \times \text{_____}] \times 4$

A. 2

B. 7

C. 4

D. 28

4. Answer the following.

1. Ayman ate 4 figs and his brother ate 3 times as him, how many figs did his brother eat ?

His brother ate = _____

[Cairo - El-Shrouk 23]

2. Hany bought 3 packs of water bottles. Each pack had 3 rows of 4 water bottles.

How many water bottles did Hany buy ?

[Giza 23]

3. Apply the properties of multiplication to solve the problems.

a. $3 \times 2 \times 4$

b. $5 \times 7 \times 2$

4. Find the unknown value.

a. $7 \times 5,000 = 7 \times 5 \times m$

b. $[3 \times 7] \times 6 = 3 \times [m \times 6]$

c. $9 \times 4 = 4 \times m$

d. $248 \times m = \text{zero}$

THEME TWO

UNIT 6

Mathematical Operations and Algebraic Thinking

Factors and Multiples

► Concept 1 :

Understanding Factors

► Concept 2 :

Understanding Multiples



CONCEPT

1

Understanding Factors

► Lessons 1&2

Identifying Factors of Whole Numbers
Prime and Composite Numbers

Learning Objectives:

- Students will define factors of a whole number.
- Students will find all factors of a given number between 0 and 100.
- Students will explain patterns they observe in numbers that have 2, 5 or 10 as factors.
- Students will find all factors of a given number between 0 and 100.
- Students will explain patterns they observe in numbers that have 3, 6 or 9 as factors.
- Students will determine if a number is prime or composite.

► Lesson 3

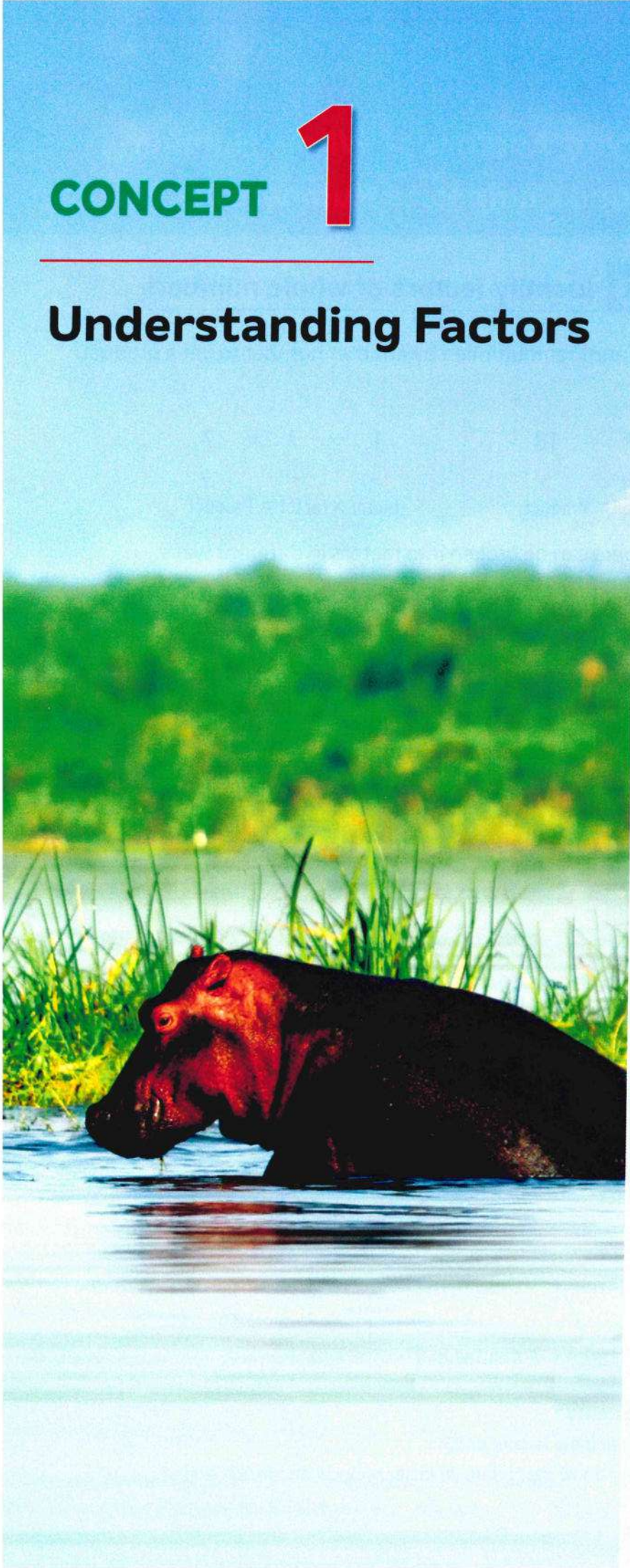
Greatest Common Factor (G.C.F)

Learning Objectives:

- Students will find common factors between two whole numbers.
- Students will identify the greatest common factor between two whole numbers.

Fast Fact

Hippos are considered the second largest land animal on Earth (first place goes to the elephant!). Males measure 1 m and a half tall, and can weigh up to 3,200 kg. That's as much as three small cars!



► Identifying Factors of Whole Numbers ► Prime and Composite Numbers

Learn 1 Identify factors of whole numbers

- A **factor** is a number multiplied by another number to get a product.

► Examples :

$$\begin{array}{c} 2 \times 9 = 18 \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{factor} \times \text{factor} = \text{Product} \end{array}$$

$$\begin{array}{c} 1 \times 7 = 7 \\ \downarrow \quad \downarrow \quad \downarrow \\ \text{factor} \times \text{factor} = \text{Product} \end{array}$$

- Many numbers can be broken into factors in different ways.

For Example :

$$12 = 1 \times 12 = 2 \times 6 = 3 \times 4$$

So, the factors of 12 are 1, 2, 3, 4, 6 and 12.

There are 6 factors or 3 factor pairs.

You can show the factors of 12 in many ways as :



Factor T-chart

1	12
2	6
3	4

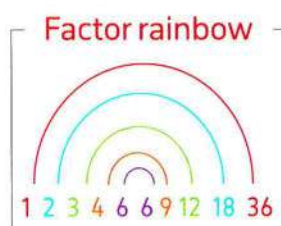
Example 1

Find all factors of 36. and create a factor rainbow , and factor T-chart.

Solution

$$36 = 1 \times 36 = 2 \times 18 = 3 \times 12 = 4 \times 9 = 6 \times 6$$

So, the factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36.



Factor T-chart

1	36
2	18
3	12
4	9
6	6

Notes for parents :

- Let your child find the factors of 15.
- Help your child show the factors by factor rainbow and factor T-chart.

How can you find all the factors of a number ?

Helpfull Hint :

1	is a factor of any number. Every number will have a factor pair of 1 and itself.	
2	→ is a factor, if the digit in the ones place is even [The ones digit is : 0, 2, 4, 6 or 8].	Examples 8, 24, 48
3	→ is a factor, if the sum of the digits is a number that exists when skip counting by 3s.	9, 18, 24
4	→ is a factor, if the number is existing when skip counting by 4s.	8, 12, 16
5	→ is a factor, if the ones digit is 0 or 5.	5, 15, 20
6	→ is a factor, if the number is even and has a factor 3.	12, 18, 24
9	→ is a factor, if the sum of the digits is a number that exists when skip counting by 9s.	9, 27, 45
10	→ is a factor, if the ones digit is 0.	20, 50, 100

Example 2

Answer the following questions.

- Is 3 a factor of 29 ? Explain how do you know.
- Is 9 a factor of 54 ? Explain how do you know.
- Is 6 a factor of 48 ? Explain how do you know.

Solution

- No, because $2 + 9 = 11$ and 11 is a number does not exist when skip counting by 3s.
- Yes, because $5 + 4 = 9$ and 9 is a number existing when skip counting by 9s.
- Yes, because 48 is even and $4 + 8 = 12$ and 12 is a number existing when skip counting by 3s.

• Ask your child more questions of factors such as : Is 2 a factor of 14 ? Is 5 a factor of 61 ? and more questions, then let your child explain how did he/she know.

Example 3

Find all the factors of 48.

Solution

To find all the factors of a number, make an organized list of multiplication sentences. Write sentences until your factors start to repeat. [Ignore any sentences that won't work]. Then list the factors. **Find all the factors of 48.**

$$48 = 1 \times 48 \text{ [1 is a factor of every whole number]}$$

$$2 \times 24 \text{ [48 is even]}$$

$$3 \times 16 \text{ [4 + 8 = 12 and 12 is existing when skip counting by 3s.]}$$

$$4 \times 12 \text{ [48 is existing when skip counting by 4s.]}$$

~~$$5 \times$$~~

$$6 \times 8 \text{ [48 is even, and 3 is a factor]}$$

~~$$7 \times$$~~

$$8 \times 6 \text{ [← STOP! Repeat of } 6 \times 8 \text{].}$$

The factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48. There are 5 factor pairs.

Check your understanding

1. Find the factors of 15 and create a factor rainbow and factor T-chart.

2. Choose the correct answer.

- 5 is a factor of _____.

A. 50	B. 51	C. 52	D. 53
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- Which number is a factor of 20 ?

A. 6	B. 10	C. 30	D. 40
------	-------	-------	-------
- The number 11 has _____ factors.

A. 2	B. 3	C. 4	D. 5
------	------	------	------
- The number 32 has _____ factors.

A. 4	B. 6	C. 8	D. 10
------	------	------	-------
- Which is the factor of every number ?

A. 0	B. 1	C. 2	D. 10
------	------	------	-------

Notes for parents :

- Ask your child to find all the factors of 72 by using the helpful hint to check all the factors.

Learn 2 Prime and composite numbers

You can use the factors of a number to tell if it is a prime number or a composite number.

▶ A **Prime number** is a whole number that has exactly two different factors, 1 and itself.

▶ **Example :**

5 is an example of a prime number. It has only two different factors, 1 and 5.

$$5 = 5 \times 1$$

▶ **More examples of prime numbers**

17, 29, 31

Number	Factors
17	1, 17
29	1, 29
31	1, 31

▶ A **Composite number** is a whole number that has more than two factors.

▶ **Example :**

6 is an example of a composite number. Its factors are 1, 2, 3 and 6.

$$6 = 1 \times 6$$

$$6 = 2 \times 3$$

▶ **More examples of composite numbers**

15, 18, 25

Number	Factors
15	1, 3, 5, 15
18	1, 2, 3, 6, 9, 18
25	1, 5, 25

Remarks

- The number 1 is neither prime nor composite because it has only **ONE** factor.
- 2 is the smallest prime number.
- All prime numbers are odd numbers except 2.
- The following table shows the prime numbers which lie between 1 and 100 :

2	3	5	7	11	13	17	19	23
29	31	37	41	43	47	53	59	61
	67	71	73	79	83	89	97	

- Use the 100-chart to check the prime and the composite numbers and let your child identify how he/she knew the difference between them.

Example 4

Check each of the following numbers if it is a prime or a composite number.

a. 9

b. 13

c. 19

Solution

a. $9 = 1 \times 9$

$= 3 \times 3$

9 has more than two factors [1, 3, 9].

So, 9 is a composite number.

b. $13 = 1 \times 13$

13 has exactly two different factors [1, 13].

So, 13 is a prime number.

c. $19 = 1 \times 19$

19 has exactly two different factors [1, 19].

So, 19 is a prime number.

Check your understanding

Choose the correct answer.

a. _____ is a prime number.

A. 9

B. 16

C. 19

D. 21

b. _____ is a prime number.

A. 1

B. 6

C. 7

D. 12

c. _____ isn't a prime number.

A. 1

B. 3

C. 5

D. 7

d. _____ is a composite number.

A. 1

B. 3

C. 13

D. 15

e. _____ isn't a composite number.

A. 11

B. 12

C. 14

D. 20

f. The smallest prime number is _____

A. 0

B. 1

C. 2

D. 3

g. The smallest odd prime number is _____

A. 0

B. 1

C. 2

D. 3

h. The prime number between 44 and 50 is _____

A. 45

B. 46

C. 47

D. 49

Notes for parents :

- Give your child a group of numbers and ask him/her to identify the prime numbers and the composite numbers.

Exercise

25

on lessons 1&2

► Identifying Factors of Whole Numbers

► Prime and Composite Numbers

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

First : Exercises on factors

1. Determine if the given number has 2 as a factor, 5 as a factor, or 10 as a factor.

Circle yes or no.

	Number	Is 2 a factor ?		Is 5 a factor ?		Is 10 a factor ?	
a.	26	Yes	No	Yes	No	Yes	No
b.	70	Yes	No	Yes	No	Yes	No
c.	15	Yes	No	Yes	No	Yes	No
d.	17	Yes	No	Yes	No	Yes	No

2. Highlight or circle the factors of the numbers listed.

a. 15: 2 5 10

b. 30: 2 5 10

c. 12: 2 5 10

d. 25: 2 5 10

e. 16: 1 2 3 4 5 6 7 8 9 10

f. 20: 1 2 3 4 5 6 7 8 9 10

3. Complete with "is a factor of" or "is not a factor of" :

a. 7 _____ 14

b. 5 _____ 52

c. 2 _____ 100

d. 3 _____ 36

e. 6 _____ 96

f. 1 _____ 67

g. 4 _____ 88

h. 9 _____ 27

i. 19 _____ 19

j. 8 _____ 40

4. Answer the following problems.

a. Is 2 a factor of 23 ? How do you know ?

b. Is 5 a factor of 35 ? How do you know ?

c. Is 6 a factor of 84 ? How do you know ?

d. Is 3 a factor of 53 ? How do you know ?

e. Is 4 a factor of 32 ? How do you know ?

f. Is 7 a factor of 48 ? How do you know ?

g.  Is 9 a factor of 63 ? How do you know ?

5.  Find all the factors of the following and create a factor rainbow and a factor T-chart.

a. 20. There are 3 factor pairs.

Factors are : _____

Factor rainbow — Factor T-chart

--	--

b. 40. There are 4 factor pairs.

Factors are : _____

Factor rainbow — Factor T-chart

--	--

c. 36. There are 5 factor pairs.

Factors are : _____

Factor rainbow — Factor T-chart

--	--

6. List all the factors of each number. You may create a factor rainbow or a factor T-chart.

a. 6 _____ [Alex. 23]

c. 38 _____

e. 48 _____

g. 19 _____

i. 13 _____

b. 10 _____ [El-Monofia 24]

d. 25 _____

f. 21 _____

h. 35 _____

j. 49 _____

7. Factor Riddles. Guess the number.

- a. The number is an even number between 1 and 10. Some of its factors include 1, 2 and 3. What number is it ?

- b.  The number is an even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14. What number is it ?

- c.  The number is an even number greater than 40. It has 10 as a factor. It is less than 60. What number is it ?

- d. The number is a two-digit number. It has 3 as a factor. Its tens digit is less than its ones digit. One of its factor pairs is 4 and 6. What number is it ?

- e.  The number is a two-digit number. It has 5 as a factor. Its tens digit is less than its ones digit. One of its factor pairs is 5 and 7. What number is it ?

Second : Exercises on prime and composite numbers**8. Complete with "Prime" or "Composite".**

- | | | | |
|----------------|----------------|----------------|----------------|
| a. 2 is _____ | b. 4 is _____ | c. 29 is _____ | d. 3 is _____ |
| e. 5 is _____ | f. 6 is _____ | g. 7 is _____ | h. 11 is _____ |
| i. 13 is _____ | j. 12 is _____ | k. 16 is _____ | l. 23 is _____ |

9. Complete.

- a. The smallest prime number is _____. [Kafir El-Sheikh 24] [Giza 23]
- b. The prime number has _____ factors. [Souhag 23]
- c. The prime number has two different factors which are _____ and _____
- d. The only even prime number is _____ [Beni Suef 24] [Giza – Abo El-Nomros 23]
- e. The 2-digit prime number which is less than 13 is _____
- f. The prime numbers between 60 and 70 are _____
- g. The number 37 has _____ factors and it is a _____ number.
- h. The number 15 is a _____ number because it has _____ factors.

10. List all the factors of each number. Then, write if the number is prime or composite.

a. 15 _____ [Port Said 24]

c.  23 _____

e.  18 _____

g.  21 _____

i. 50 _____

k.  31 _____

b. 24 _____ [El-Beheira 24] [Alex. – West 22]

d. 37 _____

f. 32 _____

h. 12 _____ [El-Menia 24] [Cairo – El-Salam 23]

j. 22 _____

l.  44 _____

11.  **Prime Numbers less than 100.** Identify all of the prime numbers less than 100.

Use skip counting and factor patterns to help you eliminate composite numbers.

1. Circle 2 and cross out all other numbers that you say when you skip count by 2s.

2. Circle 3 and cross out all other numbers that you say when you skip count by 3s.

3. Circle 5 and cross out all other numbers that you say when you skip count by 5s [some are already crossed out].

4. Circle 7 and cross out all other numbers that you say when you skip count by 7s.

5. Circle all numbers that remain except for 1.

When you are finished, the circled numbers are prime and the crossed out numbers are composite.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

12. What's the Error? Ashraf listed the first five prime numbers as 2, 3, 7, 11 and 13.

Describe his error. Write the correct answer.

Challenge

13. Write all prime numbers which are between 46 and 62

14. Write all composite numbers which are between 5 and 23



Multiple Choice Questions

Choose the correct answer.

- | | | | | |
|--|---|----|-----|-----|
| <p>1. Which of those numbers is prime ?
[Alex. 24]</p> <p>A. 22 B. 35
C. 21 D. 19</p> | <p>2. Which of the following is a composite number ?
[El-Menia 24]</p> <p>A. 11 B. 13
C. 16 D. 17</p> | | | |
| <p>3. The composite number has _____ factors.
[Cairo 23]</p> <p>A. 1 B. more than 2
C. 2 D. 0</p> | <p>4. The smallest prime number is _____
[El-Menia 24] [Port Said 24] [Alex. 24]</p> <p>A. 0 B. 1
C. 2 D. 3</p> | | | |
| <p>5. The smallest odd prime number is _____
[El-Menia 24] [Cairo 23]</p> <p>A. 0 B. 1 C. 2 D. 3</p> | <p>6. The prime number just after 15 is _____
[Alex. 23]</p> <p>A. 16 B. 17 C. 18 D. 12</p> | | | |
| <p>7. All the numbers 11, 13, 15, 17 are prime numbers except the number _____
[Souhag 24]</p> <p>A. 11 B. 13 C. 17 D. 15</p> | <p>8. The prime number has _____ factors only.
[Souhag 24] [El-Kalyoubia 23] [El-Dakahlia 22]</p> <p>A. 0 B. 2 C. 1 D. 4</p> | | | |
| <p>9. Which of the following is not a prime number ?
[Cairo - El-Marg 23]</p> <p>A. 7 B. 15 C. 19 D. 13</p> | <p>10. 3 is a factor of _____
[Cairo 24]</p> <p>A. 18 B. 20 C. 25 D. 31</p> | | | |
| <p>11. The number of factors of 29 is _____ factors.
[Alex. 24]</p> <p>A. 2 B. 3 C. 4 D. 5</p> | <p>12. _____ is a factor of 63.
[Ismailia 22]</p> <p>A. 2 B. 5
C. 7 D. 11</p> | | | |
| <p>13. The number _____ has the factors 2 and 5.
[Giza 24]</p> <p>A. 25 B. 15 C. 10 D. 5</p> | <p>14. The numbers 1, 2, 4, 5, 10, 20 are all factors of number _____
[Alex. 24]</p> <p>A. 40 B. 20 C. 10 D. 5</p> | | | |
| <p>15. All factors of number 16 are _____
[Alex. 24]</p> <p>A. 1, 2, 4, 8 B. 1, 16, 2, 8
C. 1, 2, 4, 8, 16 D. 0, 16, 2, 8, 4</p> | <p>16. The missing factor in the opposite factor T-chart is _____
[El Monofia 24]</p> <div style="display: flex; align-items: center;"><div style="flex: 1;"><table border="1"><tbody><tr><td>12</td></tr><tr><td>2 6</td></tr><tr><td>3 4</td></tr></tbody></table></div><div style="flex: 1; text-align: right;">$\frac{12}{2 \begin{array}{r} 6 \\ 3 \end{array} 4}$</div></div> <p>A. 3 B. 1 C. 24 D. 0</p> | 12 | 2 6 | 3 4 |
| 12 | | | | |
| 2 6 | | | | |
| 3 4 | | | | |

Lesson

3

Greatest Common Factor (G.C.F)

Learn

How can you find the greatest common factor for two numbers ?

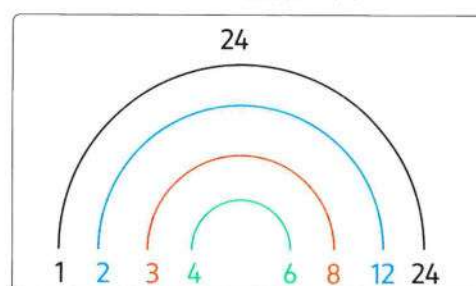
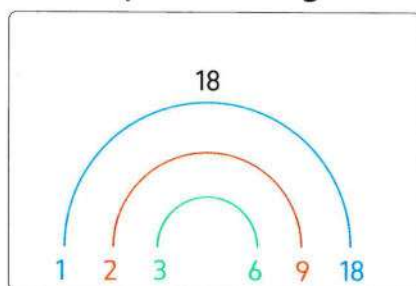
- **Common factors** of two numbers are factors that are the same.
- The **greatest common factor [G.C.F]** of two numbers is the greatest number that is a factor of both.

How can you find the greatest common factor [G.C.F] between two numbers or more ?

1. Identify the factors of each number.
2. Find the common factors for these numbers.
3. Determine the greatest common factor [G.C.F].

For Example :

How can you find the greatest common factor for 18 and 24 ?



- Factors of 18 : 1, 2, 3, 6, 9, 18
- Factors of 24 : 1, 2, 3, 4, 6, 8, 12, 24
- Common factors : 1, 2, 3, 6
- The greatest common factor [G.C.F] : 6

Example 1

Find all the common factors and G.C.F of each pair.

a. 12 and 15

b. 16 and 28

c. 7 and 11

Solution

a. 12: 1, 2, 3, 4, 6, 12

15: 1, 3, 5, 15

Common factors : 1, 3

G.C.F : 3

Factors of 12

①	12
2	6
③	4

Factors of 15

①	15
③	5

Notes for parents :

- Tell your child that common factors and greatest common factor are helpful to solve many problems in life.

b. 16: 1, 2, 4, 8, 16

28: 1, 2, 4, 7, 14, 28

Common factors: 1, 2, 4

G.C.F: 4

Factors of 16		Factors of 28	
①	16	①	28
②	8	②	14
④	4	④	7

Note that :

- 1 is the common factor of all whole numbers.
- All prime numbers has one common factor that is 1. Such as 7 and 11.

c. 7: 1, 7

11: 1, 11

Common factor: 1

G.C.F: 1

Example 2

For a dinner party, Adam is creating individual servings. He has 28 pieces of fruit and 14 yogurt cups. If he wants each serving to be identical with no food left over, what is the greatest number of servings Adam can create? How many pieces of fruit and how many yogurt cups will be in each serving?

Solution

Factors of 28: 1, 2, 4, 7, 14, 28

Factors of 14: 1, 2, 7, 14

Common factors: 1, 2, 7, 14

G.C.F: 14

The greatest number of individual servings is 14 of 2 pieces of fruit and one yogurt cup in each individual serving.

Check your understanding

Find all the common factors and G.C.F of each pair.

a. 9 and 12

b. 25 and 15

- Give your child two numbers and let him/her find the common factors and the GCF of them such as (5 and 17), (4 and 12).

Exercise

26

on lesson 3

Greatest Common Factor (G.C.F)

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

1. List the factors of each number. Highlight or circle the common factors of each pair of numbers.

- a. 16 and 20

Factors of 16 : _____

Factors of 20 : _____

- b. 18 and 4

Factors of 18 : _____

Factors of 4 : _____

- c. 20 and 30

Factors of 20 : _____

Factors of 30 : _____

- d. 17 and 22

Factors of 17 : _____

Factors of 22 : _____

- e. 21 and 35

Factors of 21 : _____

Factors of 35 : _____

- f. 36 and 42

Factors of 36 : _____

Factors of 42 : _____

2. List the common factors of the given numbers.

a. 4 and 12 _____

b. 10 and 35 _____

c. 17 and 34 _____

d. 18 and 24 _____

e. 25 and 30 _____

f. 22 and 44 _____

3. Find the common factors and the greatest common factor (G.C.F) of :

a. 4 and 6

Factors of 4 : _____

Factors of 6 : _____

Common factors : _____ GCF : _____

b. 10 and 30

Factors of 10 : _____

Factors of 30 : _____

Common factors : _____ GCF : _____

c. 12 and 18

[Giza 24] [Sharkia 22]

Factors of 12 : _____

Factors of 18 : _____

Common factors : _____ GCF : _____

d. 6 and 12

[Giza - Abo El-Nomros 23]

Factors of 6 are : _____

Factors of 12 are : _____

Common factors : _____ GCF : _____

e. 10 and 15

[Souhag 23]

Factors of 10 : _____

Factors of 15 : _____

Common factors : _____ GCF : _____

4. Find the G.C.F of the given numbers.

a. 30 and 45

[Alex. 24] [Ismailia 22]

b. 12 and 18

[Kafr El-Sheikh 24] [El-Menia 24] [Giza 23] [Cairo 23]

c. 40 and 50

d. 20 and 30

[EL-Monofia 24] [Alex. 24]

e. 10 and 24

[Port Said 24]

f. 35 and 25

[Cairo 24] [Monofia - Sers El Layan 23] [Monofia - Shebin El-Koum 22]

g. 24 and 40

[Port Said 24]

h. 33 and 11

i. 20 and 12

[Cairo 23]

j. 18 and 30

[Cairo - El-Marg 23]

k. 24 and 18

[Giza 23]

l. 12 and 15

[Giza 23]

5. Use what you know about factors and common factors to solve each problem.

- a. Sylvia has 21 pencils and 14 erasers. She wants to put them in groups. What is the greatest number of groups that can be made so that each group has the same number of items? How many pencils will be in each group? How many erasers will be in each group?

- b. There are 40 girls and 32 boys who want to participate in lap on teams. If each team must have the same number of girls and the same number of boys, what is the greatest number of teams that can participate? How many girls will be in each team? How many boys will be in each team?

- c.  A class is going on a field trip. There are 36 girls and 27 boys in the class. Students will be divided into groups of girls and boys. What is the greatest number of groups that can be made so that each group has the same number of children? How many children will be in each group of boys? How many children will be in each group of girls?

- d.  Mohab is making flower arrangements. He has 7 roses and 14 daisies. If Mohab wants to make all the arrangements identical and have no flowers left over, what is the greatest number of flower arrangements that he can make? How many roses and how many daisies will be in each flower arrangement?

- e. Eslam has 60 blue marbles and 24 red marbles. If he wants to place them in identical groups without any marbles left over, what is the greatest number of groups Eslam can make? How many blue marbles and how many red marbles will be in each group?

- f.  Amira and her friends are going on a picnic. Amira wants to make snack packs of apples and candy to take on the picnic. She has 24 apples and 36 small bags of candy. What is the greatest number of snack packs Amira can make if each pack must have exactly the same number of apples and exactly the same number of bags of candy with no snacks left over? How many apples will be in each snack pack? How many bags of candy will be in each snack pack?

Challenge

6. Find the G.C.F of 15, 18 and 21.





Multiple Choice Questions

Choose the correct answer.

- | | |
|--|---|
| <p>1. The common factor of all numbers is _____ [Kalyoubia 23] [El-Menia 24]</p> <p>A. 3 B. 2</p> <p>C. 1 D. 0</p> | <p>2. Which of the following are the common factors of 4 and 6 ?</p> <p>A. 1 and 2 B. 1 and 3</p> <p>C. 2 and 3 D. 3 and 4</p> |
| <p>3. Which of the following are the common factors of 15 and 25 ?</p> <p>A. 1 and 3 B. 1 and 5</p> <p>C. 1 and 15 D. 1 and 25</p> | <p>4. 1 and 7 are the common factors of _____</p> <p>A. 2 and 7 B. 2 and 14</p> <p>C. 7 and 12 D. 7 and 14</p> |
| <p>5. Which two numbers are common factors of 48 and 54 ?</p> <p>A. 2 B. 6</p> <p>C. 8 D. 9</p> <p>E. 12 F. 24</p> | <p>6. Which number is the greatest common factor [G.C.F] of 12 and 6 ? [Cairo - Heliopolis 23]</p> <p>A. 2 B. 3</p> <p>C. 6 D. 12</p> |
| <p>7. Which number is the greatest common factor [G.C.F] of 5 and 11 ?</p> <p>A. 2 B. 5</p> <p>C. 1 D. 11</p> | <p>8. Which number is the greatest common factor of 45 and 60 ? [Damietta 22]</p> <p>A. 5 B. 20</p> <p>C. 15 D. 30</p> |
| <p>9. The greatest common factor [G.C.F] of the two numbers : 10 , 24 is _____ [Aswan 23]</p> <p>A. 34 B. 22</p> <p>C. 2 D. 14</p> | <p>10. The G.C.F of 20 and 30 is _____</p> <p>A. 1 B. 4</p> <p>C. 5 D. 10</p> |

CONCEPT 2

Understanding Multiples

► Lessons 4&5

Identifying Multiples of Whole Numbers
Common Multiples

Learning Objectives:

- Students will define multiples of whole numbers.
- Students will identify multiples of whole numbers.
- Students will identify common multiples between two numbers.

► Lesson 6

Relationships between Factors
and Multiples

Learning Objectives:

- Students will explain the relationship between factors and multiples.
- Students will determine if a number is a factor or a multiple of another number.

Fast Fact

Believe it or not, Koalas can sleep up to 18 hours a day !
How many hours do they sleep per week ?



Lessons 4 & 5

► Identifying Multiples of Whole Numbers ► Common Multiples

Learn 1 Multiples of whole numbers

What is a multiple ?

A **multiple** is the product of a given number and another whole number.

• You can find multiples of any number using any of these ways :

- ❶ Multiplying by the whole numbers.
- ❷ Skip-counting on the number line.
- ❸ Skip-counting using 100 Chart.

For Example :

To find the multiples of 2, use any of these ways:

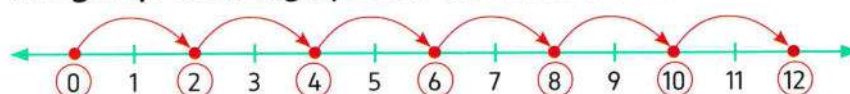


- ❶ Multiply by 0, 1, 2, 3, 4 and so on.

$2 \times 0 = 0$, $2 \times 1 = 2$, $2 \times 2 = 4$, $2 \times 3 = 6$, $2 \times 4 = 8$, and so on.

Then the products 0, 2, 4, 6, 8, ... are called the multiples of 2

- ❷ Using skip-counting by 2s on the number line.



Then the multiples of 2 are 0, 2, 4, 6, 8, 10, 12 and so on.

- ❸ Use skip-counting by 2s using 100 Chart.

Then the multiples of 2
[except zero] are

2 , 4 , 6 , 8 , 10 , 12 and so on.

Start →

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Notes for parents :

- Skip counting on the number chart helps your child notice the patterns to help him/her find the multiples more quickly.

Remarks

- Zero is a multiple for any number.
- The multiple of any number not equal to 0 is divisible by this number.

For Example :

$$2 \times 5 = 10 \rightarrow 10 \text{ is a multiple of both 2 and 5}$$

10 is divisible by 2

10 is divisible by 5



Example 1

Find the multiples of.

a. 4

b. 10

Solution

a. $4 \times 0 = 0$

$4 \times 1 = 4$

$4 \times 2 = 8$

$4 \times 3 = 12$

and so on.

Then :

The multiples of 4 are :

0, 4, 8, 12, ... and so on.

b. $10 \times 0 = 0$

$10 \times 1 = 10$

$10 \times 2 = 20$

$10 \times 3 = 30$

and so on.

Then :

The multiples of 10 are :

0, 10, 20, 30, ... and so on.



Check your understanding

a. List 4 multiples of 8.

b. Circle the numbers that are multiples of 3.

12, 17, 6, 22, 18, 27

- Explain that the number of multiples that a number has is endless.

Learn 2 Common Multiples

A **common multiple** is a multiple of two or more numbers.

Finding common multiples using number chart

Look at the column that starts with 2.

All the numbers in this column are multiples of 2.

- List the multiples of 2 on the table.

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, ...

Look at the column that starts with 3.

All the numbers in this column are multiples of 3.

- List the multiples of 3 on the table.

0, 3, 6, 9, 12, 15, 18, 21, 24, ...

These numbers that are on both lists are common multiples of 2 and 3.

- List the common multiples of 2 and 3.

0, 6, 12, 18, ...

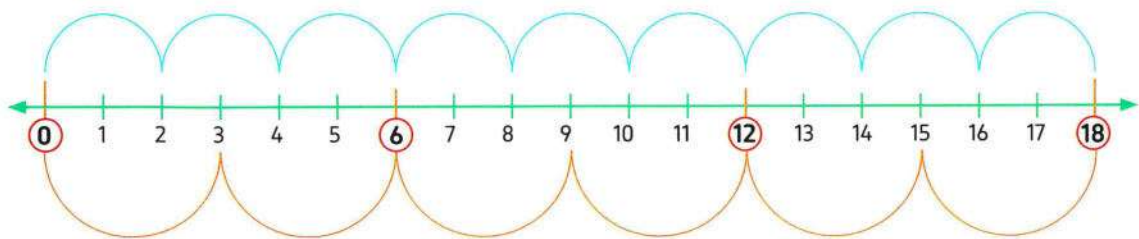
×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Finding common multiples using number line

- You can use a number line to find common multiples.

Example :

Use a number line to find common multiples of 2 and 3



The common multiples of 2 and 3 are 0, 6, 12, 18, ... and so on.

Remark

Zero is a common multiple for any number.



Notes for parents :

- Ask your child use a number chart to find multiples of a number, ask him/her to use it to find the common multiples of two numbers.

Example 2

Find the multiples of each of the numbers 4 and 6 up to 50, then find the common multiples between them.

Solution

- The multiples of 4 are: 0, 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48
- The multiples of 6 are: 0, 6, 12, 18, 24, 30, 36, 42, 48
- The common multiples of 4 and 6 are: 0, 12, 24, 36, 48

Check your understanding

Find the multiples of each of 7 and 3 up to 50, then find the common multiples between them.

Solution

The multiples of 7 are _____

The multiples of 3 are _____

The common multiples are _____



- Listing multiples help your child find common multiples.

Exercise

27

on lessons 4&5

► Identifying Multiples of Whole Numbers

► Common Multiples

● REMEMBER

● UNDERSTAND

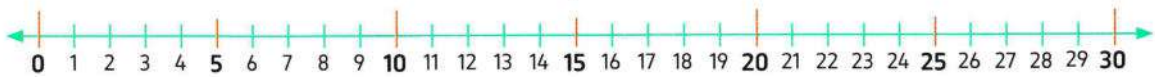
● APPLY

● PROBLEM SOLVING

From the school book

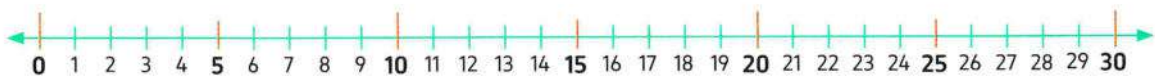
1. Skip counting on a number line. Draw a line connecting each number to show skip counting on the number line. Start at 0 each time.

a. Find the multiples of 2



The multiples of 2 are _____

b. Find the multiples of 5



The multiples of 5 are _____

2. Color the multiples. Use the hundreds chart.

a. Color the multiples of 9

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 9 are : _____

b. Color the multiples of 10

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 10 are : _____

3. a. Circle the numbers that are multiples of 6.

7 , 16 , 12 , 6 , 21 , 24 , 18

b. Circle the numbers that are multiples of 3.

6 , 17 , 21 , 15 , 10 , 36 , 29

c. Circle the numbers that are multiples of 8.

6 , 8 , 10 , 16 , 18 , 24 , 30 , 32 , 36

d. Which of the following is NOT a multiple of 4?

4 , 30 , 20 , 44 , 36

e. Which of the following is NOT a multiple of 5?

5 , 31 , 35 , 40 , 15 , 10 , 16

4. a. List 5 multiples of 7.



b. List 5 multiples of 8.

c. List the multiples of 3 up to 20.

d. List the multiples of 5 up to 30.

e. List the multiples of 9 up to 60.

5. Find the missing multiple.



a. 5 , 10 , 15 ,

b. 8 , 16 , 24 ,

c. 10 , 20 , , 40

d. 70 , 80 , , 100

e. 12 , 15 , , 21

f. 22 , , 44 , 55

g. 36 , , 54 , 63

h. , 14 , 21 , 28

i. , 24 , 30 , 36

6. a. Find the multiples of each of the numbers 2 and 3 up to 20, then find the common multiples between them.



The multiples of 2 are : _____

The multiples of 3 are : _____

The common multiples are : _____

b. Find the multiples of each of the numbers 5 and 4 up to 30, then find the common multiples between them.

The multiples of 5 are : _____

The multiples of 4 are : _____

The common multiples are : _____

7. a. Find a common multiple of 4 and 8.



- b. Find a common multiple of 7 and 3.

- c. Find two common multiple of 6 and 9.

- d. Find two common multiples of 6 and 8.

- e. Find two common multiples of 5 and 7.

- f. Find two common multiples of 4 and 7.

8. Nagwa plans to visit her grandparents every fourth day in May. Her first visit will be May 4.



How many times will she visit during May?

9. **Writing About Math** Tahani takes the bus home from school every day, but it does not take her directly to her house. After the bus drops Tahani off, she must walk the rest of the way home. The bus she takes stops every 4 kilometers as it leaves the school. If Tahani lives 18 km from school, how far does she have to walk home from the bus stop?

Draw a picture to represent your thinking.



Challenge

10. a. Find two common multiples of 2, 3 and 5.



- b. Find two common multiples of 6, 4 and 10.



Multiple Choice Questions

Choose the correct answer.

1. The common multiple for all numbers is _____

[Giza 24] [Cairo 23]

A. 0 B. 1
C. 2 D. 3

2. 0, 8, 16, 24 are multiples of the number _____

[Cairo 23]

A. 0 B. 8
C. 16 D. 24

3. The number 21 is a multiple of _____

[Kafr El-Sheikh 24]

A. 2 B. 3
C. 5 D. 9

4. 30 is a multiple of number _____

[Beheira 23]

A. 8 B. 7
C. 6 D. 4

5. 25 is a multiple of _____

[Cairo 23]

A. 5 B. 7
C. 9 D. 10

6. _____ is a multiple of 5.

[Giza 23]

A. 55 B. 503
C. 326 D. 124

7. Which of the following is a multiple of 8?

[Alex. 23]

A. 1 B. 2
C. 4 D. 16

8. Which is a common multiple of 5 and 7?

[Ismailia 24]

A. 35 B. 49
C. 45 D. 14

9. Which of the following is NOT a multiple of 7?

[Luxor 22]

A. 42 B. 63
C. 707 D. 27

10. Which of the following is a common multiple of 3 and 4?

[Luxor 24] [Giza 24]

A. 12 B. 7
C. 1 D. 2

11. The number 36 is a common multiple of _____

[Alex. 24]

A. 9 and 5 B. 10 and 2
C. 5 and 3 D. 6 and 4

12. Which is NOT a common multiple of 9 and 6?

[El-Monofia - Sers El-Layyan 23]

A. 18 B. 27
C. 36 D. 42

Lesson 6

Relationships between Factors and Multiples

Learn

What is the relation between factors and multiples ?

You can use multiplication to find the relation between factors and multiples.

For Example :

$$\begin{array}{c} 1 \times 6 = 6 \\ \uparrow \quad \uparrow \quad \uparrow \\ \text{factor} \quad \text{factor} \quad \text{multiple} \end{array}$$

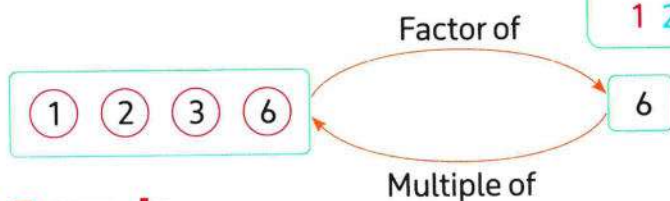
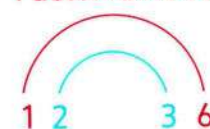
- The numbers 1 and 6 are factors of 6
- The number 6 is a multiple of each of 1 and 6

$$\begin{array}{c} 2 \times 3 = 6 \\ \uparrow \quad \uparrow \quad \uparrow \\ \text{factor} \quad \text{factor} \quad \text{multiple} \end{array}$$

- The numbers 2 and 3 are factors of 6
- The number 6 is a multiple of each of 2 and 3

From above and the opposite factor rainbow you can say that :

Factor rainbow



Example

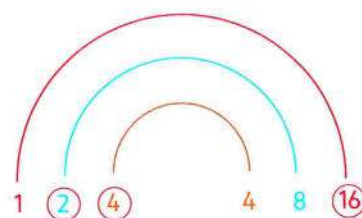
Making connection. Think about the relationships between the numbers 2, 4 and 16. Write at least two sentences describing what you notice.

Solution



Answers may vary

- 2, 4 and 16 are multiples of 2.
- 2, 4, 16 are factors of 16.
- 16 is a multiple of 2, 4 and 16.



Check your understanding

Complete.

- $3 \times 8 = 24$, then 3 and 8 are _____ of 24 and 24 is _____ of each of 3 and 8.
- An even number is a multiple 3 and 4. It lies between 30 and 40, then this number is _____

Notes for parents :

- Help your child use a multiplication table to recognize the relation between factors and multiples.
- Ask your child to explain the difference between a factor and a multiple.

Exercise

28

on lesson 6

Relationships between Factors and Multiples

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

 From the school book

1. Complete the following.



- Write 3 multiples of 5 _____, _____, _____
- Write 3 multiples of 6 _____, _____, _____
- Write 3 factors of 30 _____, _____, _____
- The numbers 1, 3, 9, 27 are factors of _____ [El-Beheira – Kafr El-Dawwar 22]
- If $4 \times 9 = 36$, then _____ is a multiple of the two numbers _____ and _____
Also, _____ and _____ are factors of the number _____
- If $7 \times 3 =$ _____, then _____ is a multiple of the two numbers _____ and _____

2. Answer the following questions.



- | | |
|---|---------------------------------|
| a. Is 2 a factor of 12? _____ | b. Is 6 a factor of 24? _____ |
| c. Is 14 a multiple of 7? _____ | d. Is 10 a multiple of 2? _____ |
| e. Is 24 a factor of 8? _____ | f. Is 2 a multiple of 4? _____ |
| g. Is 0 a multiple of 9? _____ | h. Is 16 a multiple of 3? _____ |
| i. Is 5 a factor of 25 or a multiple of 25? _____ | |
| j. Is 32 a factor of 8 or a multiple of 8? _____ | |
| k. Is 1 a factor of 9 or a multiple of 9? _____ | |
| l. What multiple of 7 is a factor of 7? _____ | |

3. Making Connections. Think about the relationships between the numbers in each group.



Write at least two sentences describing what you notice.

-  3, 6 and 12 _____

- b.  4, 8, 16 and 24 _____

- c. 2, 4, 3, 12 _____

4. Multiples Riddles. Read each riddle and solve. There may be more than one answer.

- a.  The number is an odd number. It is a multiple of 3 and 5. It is greater than 20.
 What number is it?

- b.  The number is an even number. It is a multiple of 4 and 8. It is between 10 and 20.
 What number is it?

- c.  The number is an even number. It is a multiple of 3, 4 and 6. What number is it?

- d. An even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14.
 What is it? [Suez 22]

 Challenge

- 5.** There is a number between 10 and 20 and it is a multiple of the number 4 and a factor of the number 24. What is this number?





Multiple Choice Questions

Choose the correct answer.

1. The Common factor of all numbers
+ The Common multiple of all numbers

A. Zero B. 1
C. 2 D. 10
2. All the multiples of 2 are _____ numbers.

A. even B. odd
C. prime
3. The even number which is a multiple of 3, 4, 5 together is _____ [Aswan 23]

A. 60 B. 18
C. 28 D. 12
4. _____ is an odd number that is a multiple of 3 and 7.

A. 7 B. 14
C. 21 D. 42
5. Which of the following is true ?

A. 5 is a multiple of 10 B. 10 is a factor of 5
C. 5 is a factor of 10 D. 6 is a multiple of 4
6. Which of the following is false ?

A. 282 is a multiple of 2 B. 0 is a multiple of 7
C. 3 is a factor of 24 D. 8 is a factor of 14
7. The correct relation between the two numbers 6 and 18 is _____ [Cairo - El-Salam 23]

A. 6 is a factor of 18 B. 6 is a multiple of 18
C. 18 is a factor of 6 D. 18 is the twice of 6
8. Which of the following statements determine the relation between the two numbers 7 and 49 is correctly ? [El-Beheira 24] [El-Monofia 24] [Cairo - El-Salam 23]

A. 7 is a multiple of 49 B. 7 is a factor of 49
C. 49 is a factor of 7 D. 7 equals 9 times 49
9. Which of the following statements determine the relation between the two numbers 6 and 36 incorrectly ?

A. 6 is the multiple of 36 B. 36 is a factor of 6
C. 6 is a factor of 36 D. 36 equals 5 times 6

Unit Six Assessment

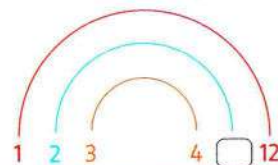


1. Choose the correct answer.

1. The prime number between 30 and 35 is _____. [Cairo 23]
 A. 31 B. 32 C. 33 D. 34
2. The number 8 has _____ factors. [Cairo 23]
 A. 2 B. 3 C. 4 D. 5
3. All the factors of 16 are _____. [Cairo 23]
 A. 1, 16 B. 2, 4, 8 C. 1, 2, 4, 8, 16 D. 4, 8, 16
4. The number _____ is a multiple of the number 4 [El-Kalyoubia 23]
 A. 3 B. 5 C. 18 D. 16
5. The number _____ is the common factor of all numbers. [Giza 23]
 A. 1 B. 0 C. 2 D. 3
6. _____ is not a multiple of 6 [Alex. - El-Montaza 23]
 A. 30 B. 36 C. 16 D. 24
7. _____ is a factor of 72 [Aswan 23]
 A. 5 B. 9 C. 7 D. 11

2. Complete.

1. The common factor for all numbers is _____. [Ismailia 24] [Cairo 23]
2. _____ is the common multiple for all numbers. [Alex. 24] [El-Monofia - Sadat 23]
3. The number of factors of a prime number is _____. [El-Menia - Samlout 22]
4. The only even prime number is _____. [El-Sharkia 22]
5. The G.C.F of 15 and 25 is _____. [Kafr El-Sheikh 24]
6. The smallest odd prime number is _____. [El-Beheira - Kafr El-Dawwar 22]
7. A number that has only two factors and their sum of 8 is _____. [Aswan - Kom Ombo 22]
8. The missing factor in the opposite factor rainbow is _____. [Luxor 22]



3. Choose the correct answer.

1. Which of the following is a multiple of 7? [Giza 24]
 A. 21 B. 50 C. 47 D. 107

2. The numbers 1, 5, 25 are factors of _____ [El-Monofia 24]
 A. 5 B. 10 C. 15 D. 25
3. The number 40 is a common multiple of _____ [Alex. 24]
 A. 6 and 4 B. 3 and 2 C. 5 and 4 D. 8 and 9
4. Which of those numbers is not prime ? [Alex. 24]
 A. 7 B. 21 C. 17 D. 19
5. The multiple of 4 is _____ [Giza 23]
 A. 1 B. 2 C. 3 D. 4
6. The number 7 has _____ factors. [Cairo 23]
 A. 1 B. 2 C. 3 D. 4
7. Which of the following is a prime number ? [Cairo 23]
 A. 10 B. 15 C. 17 D. 12

4. Answer the following.

1. An even number between 20 and 30 , some of its factors include : 1 , 2 , 4 , 7 and 14
 What is it ? The number is _____ [Giza - Awseem 23]
2. Find all factors of 30 and create a factor rainbow and T-chart.

3. Find the multiples of each of the numbers 8 and 12 up to 40, then find the common multiples between them.

4. Find the common factors and the greatest common factor [G.C.F] of 24 and 40.



THEME TWO

UNIT 7

Mathematical Operations and Algebraic Thinking

Multiplication and Division : Computation and Relationships

► **Concept 1 :**

Multiplying by 1-Digit and 2-Digit Factors

► **Concept 2 :**

Dividing by 1-Digit Divisors



CONCEPT

1

Multiplying by 1-Digit and 2-Digit Factors

► Lessons 1&2

The Area Model Strategy
The Distributive Property

Learning Objectives:

- Students will use area models to represent two-digit by one-digit multiplication.
- Students will explain how they use place value to multiply.
- Students will use an area model to multiply a one-digit number by a whole number with up to four digits.
- Students will explain the distributive property of multiplication.
- Students will apply the distributive property of multiplication to multiply a one-digit number by a whole number with up to four digits.

► Lessons 3&4

The Partial Products Algorithm
Multiply by a One-Digit Number

Learning Objectives:

- Students will use the partial products algorithm to multiply a one-digit number by a whole number with up to four digit.
- Students will estimate products of multi digit multiplication problems.
- Students will use the standard algorithm to multiply a one-digit number by a whole number with up to four digits.

► Lesson 5

Multiply a Two-Digit Number by
a Multiple of 10

Learning Objectives:

- Students will identify patterns when multiplying two multiples of 10.
- Students will multiply a two-digit number by a multiple of 10.
- Students will assess the reasonableness of an answer using estimation and mental math.

Fast Fact

A baby dolphin is called a calf.
A calf eats **4 times** each hour
during the first week of life.
**How many times does it eat
in a day during this time ?**



Lessons 1 & 2

- The Area Model Strategy
- The Distributive Property

Learn

How to multiply a 1-digit number by a 2-digit number ?

Mazen has 4 boxes of crayons.

Each box holds 12 crayons.

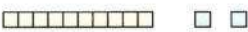
How many crayons does Mazen have in all ?

Multiply : 4×12

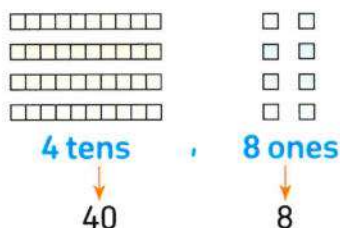
You can use any of these ways to multiply.



First : Model 2-digit multiplication

- Remember that you can model 12 as 

- Model the problem 4×12 using base-ten blocks.



Then, $4 \times 12 = 40 + 8 = 48$
So, Mazen has 48 crayons in all.



Second : Using multiplying with the area model multiplication

Model the problem 4×12 using the rectangle area model.



Remember

Area of a rectangle = length $\times$ width

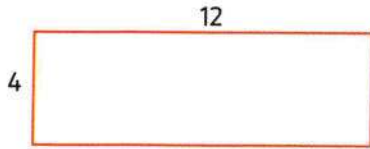


Notes for parents :

- Remind your child that when the number of ones blocks is 10 or greater, he/she needs to regroup 10 ones as 1 ten.

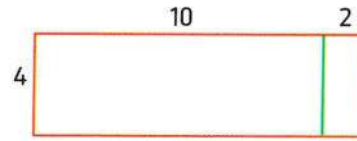
Step 1

Draw a rectangle where the smaller side shows 4 and the longer side shows 12.

**Step 2**

Decompose 12 using place value.

$$12 = 10 + 2$$

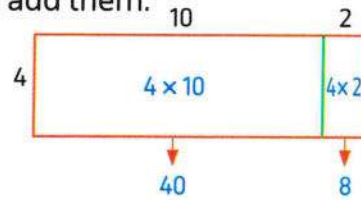
**Step 3**

Find the area of each of the new two rectangles, then add them.

$$\bullet 4 \times 10 = 40$$

$$\bullet 4 \times 2 = 8$$

$$\text{So, } 4 \times 12 = 40 + 8 = 48$$

**Third : Using the distributive property**

You can use **the distributive property** to solve the problem 4×12 .

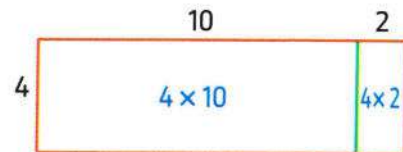
The **distributive property** states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

• To find 4×12 using distributive property do as follow :

Break apart 12 into $[10 + 2]$

$$4 \times [10 + 2] = [4 \times 10] + [4 \times 2] \text{ "Distributive property"}$$

$$= 40 + 8 = 48$$

**Example 1**

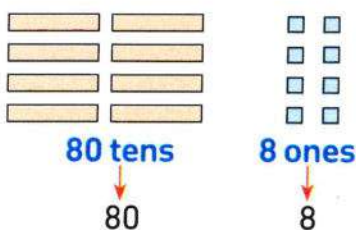
Use base-ten blocks to find each product.

a. 22×4

b. 5×13

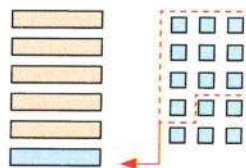
Solution

a.



$$\text{So, } 22 \times 4 = 80 + 8 = 88$$

b.



Regroup 10 ones as 1 ten

$$\text{So, } 5 \times 13 = 60 + 5 = 65$$



• While there are multiple ways to decompose a number, numbers should be decomposed using place value when using an area model for multiplication. For example, it is possible to decompose 23 in many different ways, including 17 and 6, 10 and 13, or 14 and 9. However, 23 should be decomposed into 20 and 3 when using an area model for multiplication.

Example 2

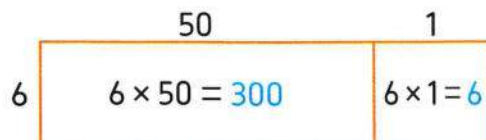
Draw an area model to find each product.

a. 6×51

b. 39×8

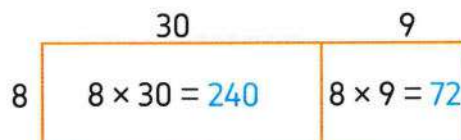
Solution 

a. $51 = 50 + 1$



So, $6 \times 51 = 300 + 6 = 306$

b. $39 = 30 + 9$



So, $39 \times 8 = 240 + 72 = 312$

Example 3

Use the distributive property to solve each problem.

a. 6×324

b. $7 \times 2,915$

c. 5×407

Solution 

a. $6 \times 324 = 6 \times [300 + 20 + 4]$
 $= [6 \times 300] + [6 \times 20] + [6 \times 4]$
 $= 1,800 + 120 + 24 = 1,944$

b. $7 \times 2,915 = 7 \times [2,000 + 900 + 10 + 5]$
 $= [7 \times 2,000] + [7 \times 900] + [7 \times 10] + [7 \times 5]$
 $= 14,000 + 6,300 + 70 + 35 = 20,405$

c. $5 \times 407 = 5 \times [400 + 7]$
 $= [5 \times 400] + [5 \times 7]$
 $= 2,000 + 35 = 2,035$

 **Check** your understanding

Solve each problem. Draw an area model to help you if necessary.

a. 7×29

b. 4×283

Notes for parents :

- Your child may incorrectly decompose the factors according to their digits rather than according to the value of their digits. He/She may decompose 24 as 2 and 4 rather than 20 and 4.
- Your child may get confused with how many zeros to place at the end of a product. For example, your child may write $7 \times 2,000 = 1,400$ instead of $7 \times 2,000 = 14,000$. Your child may also write $5 \times 200 = 100$ instead of $5 \times 200 = 1,000$

Exercise 29

on lessons 1&2

- The Area Model Strategy
- The Distributive Property

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

 From the school book

1.  Use a quick draw to solve each of the problems that follow.

a. 17×4

b. 21×3

c. 14×5

2.  Draw an area model to solve each of the problems.

a. 32×7

b. 88×6

c. 91×4

d. 35×7

e. 249×5

f. 5×483

g. 7×723

h. 530×7

i. $4,734 \times 5$

j. $2,391 \times 8$

3. Use the distributive property to solve each problem.

a. 8×35

b. 7×68

c. 2×724

d. 3×684

e. 5×135

f. 8×214

g. $3 \times 1,476$

h. $9 \times 4,523$

i. $4 \times 9,035$

j. $8 \times 2,560$

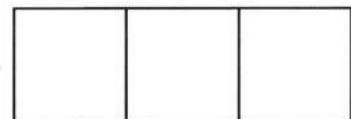
4. Complete.

a. The missing value x in the model is _____



[Alex. 24]

b. $246 \times 5 =$ _____ [solve by using area model] →



[Cairo 24]

c. $2 \times$ _____ $= [2 \times 10] + [2 \times 7]$

[El-Monofia 24]

d. $5 \times 467 = 5 \times 400 + 5 \times$ _____ $+ 5 \times 7$

e. $2 \times 139 = 2 \times$ _____ $+ 2 \times$ _____ $+ 2 \times 9$

f. $4 \times 7,346 = 4 \times$ _____ $+ 4 \times 300 + 4 \times$ _____ $+ 4 \times 6$

g. $3 \times 1,805 = 3 \times$ _____ $+ 3 \times$ _____ $+ 3 \times$ _____

h. $8 \times$ _____ $= 8 \times 500 + 8 \times 90 + 8 \times 2$

i. $241 \times$ _____ $= 6 \times 200 + 6 \times 40 + 6 \times 1$



5.  By using an area model strategy, solve the problem that follows.

The route that the river bus travels is 58 kilometers long. How many kilometers does the river bus travel if it follows this route 9 times daily?

[Aswan 23]

6. Answer each of the following problems. Draw an area model to help you if need.

a. Samaa bought 13 kg of apples for 6 L.E. a kg., find the money which she paid. [Alex. 24]

b. A candy box contains 15 pieces, how many candy pieces are in 9 similar boxes? [Cairo 24]

c. There are 6 people who won 145 pounds each at the fair. How much money did they win all together? [El-Kalyoubia & Ismailia 22]

d. Twenty-two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips? [Alex. - Borg El-Arab 22]

e.  A city bus is 1,280 centimeters long. What is the length of 3 city buses?

7.  **Error Analysis.** Examine the student work that follows.

Identify what the student did correctly and incorrectly, and then try to solve the problem correctly.

A student solved the problem 36×8 in the following way:

	3	6	
8	8×3 $= 24$	8×6 $= 48$	
	$36 \times 8 = 72$		

$$\begin{array}{r} 48 \\ + 24 \\ \hline 72 \end{array}$$

Explain your thinking.

Multiple Choice Questions

Choose the correct answer.

1. The opposite area model equals _____

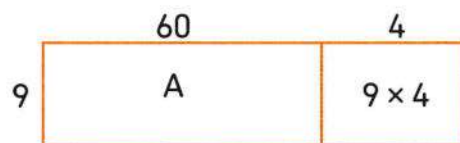
[Cairo 23]



- A. 532
B. 523
C. 530
D. 352

2. To multiply " 64×9 " using the opposite area model, then A = _____

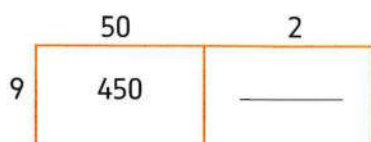
[Cairo 24]



- A. 9×60
B. $9 + 60$
C. 9×6
D. 9×40

3. The opposite area model represents the product 9×52 , then the missing value in the model is _____

[Cairo - El-Marg 23]



- A. 9
B. 100
C. 45
D. 18

4. The opposite area model represents the product 7×48 , then the missing value is _____

[Alex. - Al-Agamy 23]



- A. 28
B. 78
C. 56
D. 15

5. In the opposite area model, the missing number of multiplying 5×22 is _____

[Ismailia 24] [Alex. 23]



- A. 110
B. 10
C. 7
D. 1

6. The opposite area model represents the product 7×25 , then the missing value in the model is _____

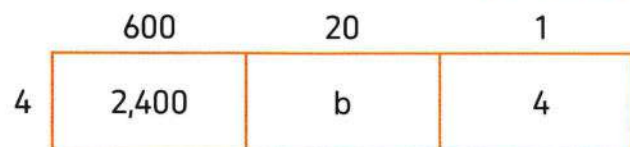
[Giza 23]



- A. 14
B. 140
C. 35
D. 350

7. In the model area, the value of b is _____

[El-Menia 24]



- A. 5
B. 40
C. 80
D. 90

8. $8 \times 36 = [8 \times \text{_____}] + [8 \times 6]$ [Giza 24]

- A. 3
B. 6
C. 30
D. 60

9. Which of the following represents 35×6 ? [Kalyoubia 23]
- A. $[5 \times 6] + [30 \times 6]$ B. $[5 \times 6] + [3 \times 6]$
C. $[50 \times 6] \times [3 \times 6]$ D. $[50 \times 6] \times [30 \times 6]$
-
10. $7 \times 526 = 7 \times [\text{—————} + 20 + 6]$ [Cairo 23]
- A. 5 B. 50 C. 500 D. 5,000
-
11. $[7 \times 30] + [7 \times 5] = \text{—————}$ [Souhag 23]
- A. 7×53 B. 70×53 C. 73×75 D. 7×35
-
12. If Mohamed rides his bicycle 13 km per day, then he covers ————— in 5 days. [Beni Suef 24]
- A. 5 km B. 13 km C. 18 km D. 65 km
-
13. Bassem saves 746 pounds monthly, then how much money does he save in 9 months?
- A. 6,514 B. 6,714 C. 6,914 D. 6,974

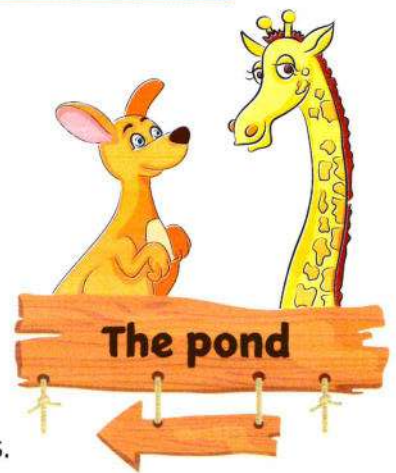


Lessons 3 & 4

- The Partial Products Algorithm
- Multiply by a One-Digit Number

Learn 1 The partial products algorithm

If it takes 16 minutes to go around a pond on a boat at the zoo, how many minutes does it take to go around the pond twice?



Multiply: 16×2

Use the partial products algorithm as follows.

Step 1

Multiply the tens.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 20 \end{array} \rightarrow [10 \times 2]$$

Step 2

Multiply the ones.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 20 \\ 12 \end{array} \rightarrow [6 \times 2]$$

Step 3

Add the products.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 20 \\ + 12 \\ \hline 32 \end{array}$$

So, it takes 32 minutes.

Hint

You can multiply the ones first, then multiply the tens as follows.

Step 1

Multiply the ones.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 12 \end{array} \rightarrow [6 \times 2]$$

Step 2

Multiply the tens.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 12 \\ 20 \end{array} \rightarrow [10 \times 2]$$

Step 3

Add the products.

$$\begin{array}{r} 16 \\ \times 2 \\ \hline 12 \\ + 20 \\ \hline 32 \end{array}$$

Notes for parents :

- Your child should recognize that the commutative property of multiplication allows us to write the factors in any order.

Example 1

Use the partial products algorithm to solve the following.

a. 76×3

b. 8×214

c. $6 \times 1,352$

Solution 

a.

$$\begin{array}{r} 76 \\ \times 3 \\ \hline 210 \\ + 18 \\ \hline 228 \end{array}$$

$210 \rightarrow [70 \times 3]$ "Multiplying the tens"
 $+ 18 \rightarrow [6 \times 3]$ "Multiplying the ones"

b.

$$\begin{array}{r} 214 \\ \times 8 \\ \hline 1,600 \\ + 80 \\ + 32 \\ \hline 1,712 \end{array}$$

$1,600 \rightarrow [200 \times 8]$ "Multiplying the hundreds"
 $+ 80 \rightarrow [10 \times 8]$ "Multiplying the tens"
 $+ 32 \rightarrow [4 \times 8]$ "Multiplying the ones"

c.

$$\begin{array}{r} 1,352 \\ \times 6 \\ \hline 6,000 \\ + 1,800 \\ + 300 \\ + 12 \\ \hline 8,112 \end{array}$$

$6,000 \rightarrow [1,000 \times 6]$ "Multiplying the thousands"
 $+ 1,800 \rightarrow [300 \times 6]$ "Multiplying the hundreds"
 $+ 300 \rightarrow [50 \times 6]$ "Multiplying the tens"
 $+ 12 \rightarrow [2 \times 6]$ "Multiplying the ones"



 **Check** your understanding

Fill in the blanks with the missing numbers to multiply.

a.

$$\begin{array}{r} 35 \\ \times 5 \\ \hline 150 \\ + \underline{\quad} \\ \hline \end{array}$$

$150 [\quad \times \quad]$
 $+ \underline{\quad} [5 \times 5]$

b.

$$\begin{array}{r} 254 \\ \times 6 \\ \hline \underline{\quad} \\ + 300 \\ + \underline{\quad} \\ \hline \end{array}$$

$\underline{\quad} [6 \times 200]$
 $+ 300 [6 \times \quad]$
 $+ \underline{\quad} [6 \times 4]$

• Remind your child to line up the products carefully according to the place value.

Learn 2 Multiplying by a 1-digit number using standard algorithm

Find : 24×3

You can use the standard multiplication algorithm.

Step 1

Multiply the ones.
 3×4 ones = 12 ones
 Regroup the ones.

Regroup 12 ones as 1 ten and 2 ones

$$\begin{array}{r} 24 \\ \times 3 \\ \hline 2 \end{array}$$

Step 2

Multiply the tens.
 3×2 tens = 6 tens
 , then add the regrouped ten
 $6 \text{ tens} + 1 \text{ ten} = 7 \text{ tens}$

$$\begin{array}{r} 24 \\ \times 3 \\ \hline 72 \end{array}$$

So, $24 \times 3 = 72$

Hint

You can write the products in a short way as the following examples.

Example 2

Use the standard multiplication algorithm to solve the following.

a. 6×512

b. $2,194 \times 7$

Solution 

a.

$$\begin{array}{r} 512 \\ \times 6 \\ \hline 3,072 \end{array}$$

b.

$$\begin{array}{r} 2,194 \\ \times 7 \\ \hline 15,358 \end{array}$$



 **Check** your understanding

Find the products.

a. 56×4

b. 3×174

c. $4,015 \times 2$

Notes for parents :

- Your child sometimes has difficulty demonstrating proper regrouping when using the standard algorithm for multiplication. He/She may omit writing the digit above the correct place or he/she may attempt to place two digits at a time in the product.
- Train your child to use the short way to find the products.

Learn 3 Estimate products - Choose a strategy

Example 3

Estimate the product. Multiply to check.

a. 3×62

b. 284×7

Solution

- a. Round 62 to the greatest place value.

$$\begin{array}{r} 3 \times 62 \\ \downarrow \\ 3 \times 60 = 180 \end{array}$$

The actual product :

[Using the partial products algorithm]

$$\begin{array}{r} 62 \\ \times 3 \\ \hline 180 \longrightarrow [3 \times 60] \\ + 6 \longrightarrow [3 \times 2] \\ \hline 186 \end{array}$$

- b. Round to the nearest ten

$$\begin{array}{r} 284 \longrightarrow 280 \\ \times 7 \\ \hline 1,960 \end{array}$$

The actual product :

[Using the Standard Multiplication Strategy]

$$\begin{array}{r} 284 \\ \times 7 \\ \hline 1,988 \end{array}$$

Check your understanding

Estimate the product. Choose a strategy to find the actual product.

a. 87
 $\times 6$

b. 764
 $\times 5$

c. 4×341

- Let your child use rounding to check the reasonableness of the answer.
- Your child may have difficulty determining the number of zeros in a product when multiplying by multiples of 10, especially when the product of the basic fact ends in zero. For example, your child may think that $80 \times 5 = 40$ rather than 400.

Exercise

30

on lessons 3&4

► The Partial Products Algorithm

► Multiply by a One-Digit Number

● REMEMBER

● UNDERSTAND

● APPLY

● PROBLEM SOLVING

From the school book

1. Fill in the blanks with the missing numbers.



a.

$$\begin{array}{r} 28 \\ \times 6 \\ \hline 120 \\ + 48 \\ \hline 168 \end{array} \quad \begin{array}{l} [\text{---} \times \text{---}] \\ [\text{---} \times \text{---}] \end{array}$$

b.

$$\begin{array}{r} 239 \\ \times 7 \\ \hline 1,400 \\ + 210 \\ + 63 \\ \hline 1,673 \end{array} \quad \begin{array}{l} [\text{---} \times \text{---}] \\ [\text{---} \times \text{---}] \\ [\text{---} \times \text{---}] \end{array}$$

c.

$$\begin{array}{r} 2,523 \\ \times 5 \\ \hline 10,000 \\ + \text{---} \\ + 100 \\ + \text{---} \\ \hline \end{array} \quad \begin{array}{l} [\text{---} \times \text{---}] \\ [5 \times 500] \\ [5 \times \text{---}] \\ [5 \times 3] \end{array}$$

d.

$$\begin{array}{r} 6,421 \\ \times 6 \\ \hline 36,000 \\ + \text{---} \\ + 120 \\ + \text{---} \\ \hline \end{array} \quad \begin{array}{l} [\text{---} \times \text{---}] \\ [6 \times 400] \\ [6 \times \text{---}] \\ [6 \times 1] \end{array}$$

2. Solve using the partial products algorithm.



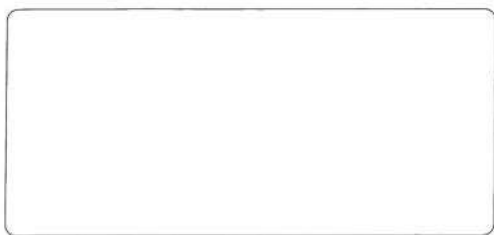
a. 8×67

b. 29×4

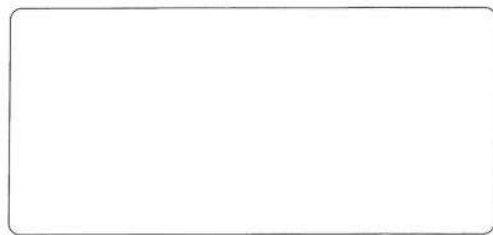
c. 5×343

d. 6×678

e. 284×4



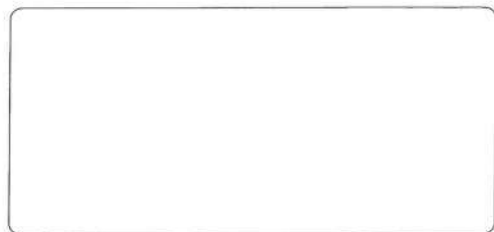
f. 305×7



g. $3 \times 2,539$



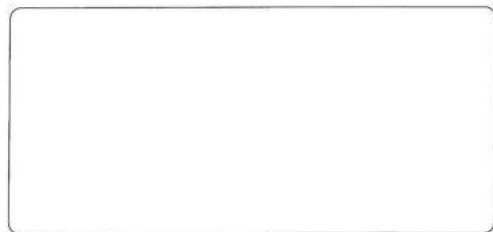
h. $4,731 \times 4$

**3. Solve using the standard algorithm.**

a. 7×30

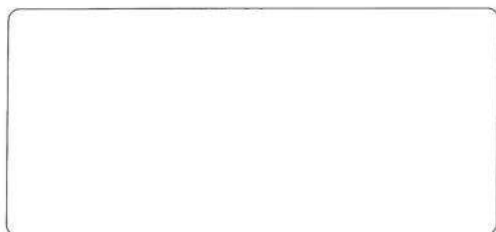


b. 27×3



c. 123×4

[El-Menia 24]



d. 126×7

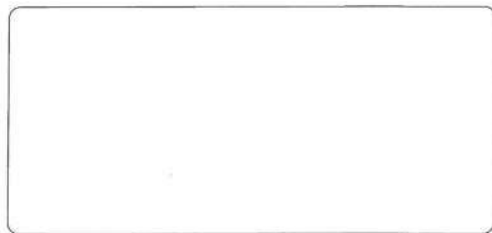
[El-Monofia 22]



e.  630×5



f. 204×2



g. 356×4

[Giza 24]

h. $1,390 \times 2$

i. $2,213 \times 4$

j. $3 \times 2,450$

[Cairo 24]

4.  Estimate the product, then solve using the standard algorithm as in the example.

a.

$$\begin{array}{r} 17 \\ \times 6 \\ \hline \end{array}$$

Estimate

Answer

b.

$$\begin{array}{r} 32 \\ \times 3 \\ \hline \end{array}$$

Estimate

Answer

c.

$$\begin{array}{r} 134 \\ \times 2 \\ \hline \end{array}$$

Estimate

Answer

d.

$$\begin{array}{r} 758 \\ \times 3 \\ \hline \end{array}$$

Estimate

Answer

e.

$$\begin{array}{r} 1,349 \\ \times 2 \\ \hline \end{array}$$

Estimate

Answer

f.

$$\begin{array}{r} 2,327 \\ \times 4 \\ \hline \end{array}$$

Estimate

Answer

5.  Three students tried solving 328×2 using the standard algorithm. Explain who you think solved the problem correctly and identify at least one error in another student's solution.

Student 1

$$\begin{array}{r} 328 \\ \times 2 \\ \hline 646 \end{array}$$

Student 2

$$\begin{array}{r} 1 \\ 328 \\ \times 2 \\ \hline 656 \end{array}$$

Student 3

$$\begin{array}{r} 1 \\ 328 \\ \times 2 \\ \hline 746 \end{array}$$

6. Answer the following.

- a. A candy box contains 15 pieces. How many candy pieces are in 9 similar boxes?

[El-Monofia 24]

- b. Twenty two passengers can fit on each river bus at a time.

What is the maximum number of passengers the river bus can carry if it makes 5 trips?

[Cairo 23]

- c. A library has 5 shelves and each shelf has 35 books. What is the total number of books in the library ? [Giza 23]

- d. Ahmed bought 4 balls, if the price of each ball is 85 pounds, how much money did he pay ? [Giza - Abo El-Nomros 23]

- e. There are 6 people who won 150 pounds each at the fair. How much money did they win all together ? [El-Monofia 24]

- f. Mohamed bought 5 m of cloth, the price of one meter is 145 pounds. How much did Mohamed pay for the cloth ? [Cairo 24]

- g. 5 people participated in an exhibition and each one of them won 150 pounds, how much money did they all win ? [Souhag 23]

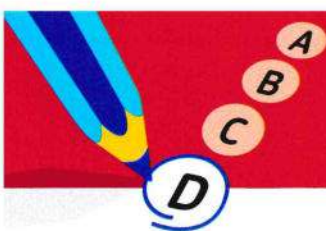
- h. If mass of a box is 124 kg, then find the mass of 5 boxes with the same mass. [El-Monofia - Sadat City 23]

- i. A factory produced 4,256 toys in each month. How many toys were produced in 3 months ? [Cairo - El-Marg 23]

Challenge

7. Find the missing numbers on Manal paper.
Explain your thinking.

○ ○ ○ ○ ○ ○ ○ ○
Manal
4, 6 2 3
×
36, 9 4



Multiple Choice Questions

Choose the correct answer.

1. $21 \times 3 =$ _____ [Cairo 23]

- A. 53 B. 63
C. 73 D. 83

2. $42 \times 4 =$ _____ [El-Menia 24]

- A. 192 B. 168
C. 340 D. 654

3.
$$\begin{array}{r} 54 \\ \times 7 \\ \hline \end{array}$$

- A. 63 B. 378
C. 278 D. 368

4.
$$\begin{array}{r} 235 \\ \times 6 \\ \hline \end{array}$$

- A. 60 B. 1,200
C. 1,410 D. 3,192

5. $2 \times 1,324 =$ _____

- A. 2,648 B. 8,462
C. 26,480 D. 2,688

6. $504 \times 6 =$ _____

- A. 324 B. 30,240
C. 3,240 D. 3,024

7. The product of 192×3 is near close to _____

- A. 400 B. 500
C. 600 D. 700

8. Which product is NOT correct ?

- A. $63 \times 4 = 252$
B. $3 \times 48 = 144$
C. $7 \times 27 = 149$
D. $6 \times 153 = 918$

9. Which partial products can be used to solve $[35 \times 6]$?

- A. $[3 \times 6] \times [50 \times 6]$ B. $[30 \times 6] \times [50 \times 6]$
C. $[30 \times 6] + [5 \times 6]$ D. $[3 \times 6] + [5 \times 6]$

10. What is the ones digit of the product of 53×6 will be without solving the whole problem ?

- A. 3 B. 6 C. 8 D. 9

Lesson

5

Multiply a Two-Digit Number by a Multiple of 10

Learn 1 Multiplying two multiples of 10

Essam bought 20 statues for 30 pounds each as souvenirs, how much money did he pay ?

Multiply : 20×30

How to find the product of 20×30 .

$$20 \times 30 = 600$$

- Multiply $2 \times 3 = 6$ [Basic Fact]
- Put 00 on the right to get the number 600.

So, he paid 600 pounds.



Remember

The numbers 10, 20, 30, 40, ... are multiples of 10.

Example 1

Find the product.

a. 50×30

b. 40×70

Solution

$$a. 50 \times 30 = 1,500$$

$$b. 40 \times 70 = 2,800$$



Check your understanding

1. Multiply : 70×40

2. Multiply : 80×90

Notes for parents :

- Let your child notice that the product has as many zeroes as the total number of zeroes in the factors plus any additional zeroes in the basic fact product.

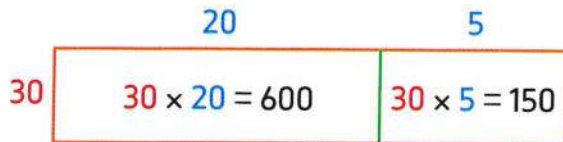
Learn 2 Multiplying a 2-digit number by a multiple of 10

A primary school is formed of 30 classes of 25 pupils each.

Calculate the total number of pupils.

Multiply : 30×25

You can use the area model.



$$30 \times 25 = 600 + 150 = 750$$

So, the total number of pupils is 750.

Example 2

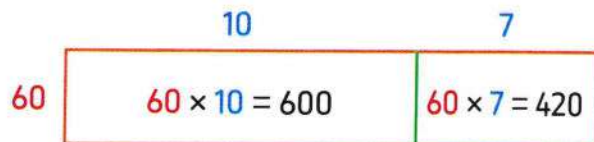
Multiply.

a. 60×17

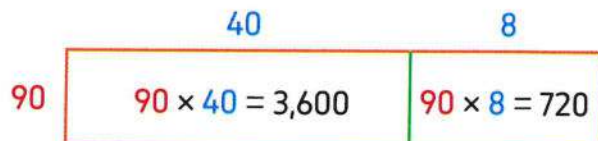
b. 48×90

Solution

a. $60 \times 17 = 600 + 420$
 $= 1,020$



b. $48 \times 90 = 3,600 + 720$
 $= 4,320$



Check your understanding

Multiply : 28×70

Work area

• Let your child notice that the product of any number and a multiple of 10 has a zero in the ones place.

Exercise

31

on lesson 5

Multiply a Two-Digit Number by a Multiple of 10

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

1. Find the following products.

- a. $20 \times 70 =$ _____ [Cairo 23] b. $30 \times 50 =$ _____ [Giza 24] c. $20 \times 80 =$ _____
- d. $50 \times 60 =$ _____ [Alex. 24] e. $40 \times 40 =$ _____ f. $60 \times 30 =$ _____
- g. $70 \times 70 =$ _____ h. $90 \times 70 =$ _____ i. $90 \times 90 =$ _____
- j. $7 \times 20 =$ _____ [Beni Suef 24] k. $4 \times 300 =$ _____ [Port Said 24]
- l. $32 \times 100 =$ _____ [Cairo 24] m. $500 \times 9 =$ _____ [El-Monofia 24]
- n. $50 \times 70 =$ _____ [Luxor 24] o. $21 \times 20 =$ _____ [El-Dakahlia 22]
- p. $30 \times 22 =$ _____ [Cairo - El-Salam 23] q. $70 \times 22 =$ _____ [El-Monofia 24]
- r. $5 \times 3,000 =$ _____ $\times 1,000$ [Alex. 24] s. $3 \times 4,000 =$ _____ $\times 1,000$ [Alex. 24]
- t. _____ $\times 70 = 3500$ [El-Menia 24] u. _____ $\times 200 = 2 \times 300$

2. Complete the table.

	Problem	Area Model	Numbers and symbols
a.	40×62	_____	2,480
b.	70×55	_____	_____
c.	54×30	_____	_____
d.	40×78	_____	_____
e.	44×20	_____	_____
f.	15×30	_____	_____
g.	10×40	_____	_____
h.	72×40	_____	_____

3. Answer the following.

- a. Mariam bought 10 books, price of each 26 pounds,
find price of all books, Mariam bought. [El-Monofia 24]



- b. A merchant bought 20 boxes of soft drinks for 40 pounds each.
How much money did he pay ?



- c. Khaled bought 15 books, if the price of one book was 40 pounds.
What was the mount that Khaled paid ? [El Menia 24]



- d. A group of 52 persons want to travel by bus.
Each bus ticket costs 40 pounds.
How much money do they pay in all ? [Alex. 24]



- e.  A group of 38 people want to travel by bus.
Each bus ticket costs 30 L.E. How much do they need to pay in all ?



4. Error Analysis.

Examine the student's work. Is his answer reasonable ? How do you know ?
Explain your thinking.

$$22 \times 50 = [20 + 2] \times 50 = [20 \times 50] + [2 \times 50] = 100 + 100 = 200$$

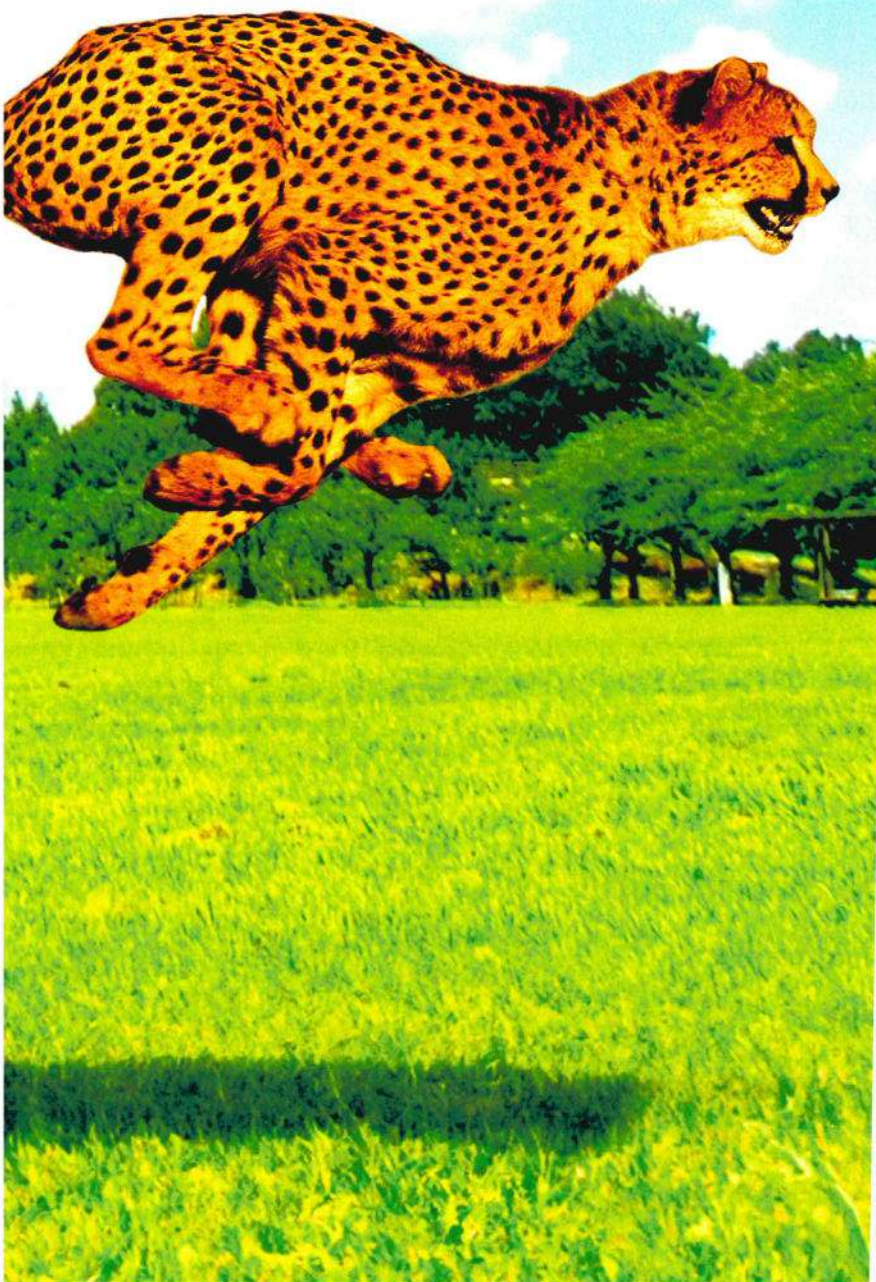
Multiple Choice Questions

Choose the correct answer.

1. $7 \times 20 =$ _____ [Port Said 24]
 - A. 720
 - B. 140
 - C. 7,020
 - D. 14,000
2. $50 \times 6 =$ _____ [Kafr El-Seikh 24]
 - A. 30
 - B. 300
 - C. 3,000
 - D. 3
3. _____ $\times 70 = 3,500$
 - A. 30
 - B. 35
 - C. 50
 - D. 53
4. $60 \times 70 =$ _____ [Giza - Abo El-Nomros 23]
 - A. 420
 - B. 4,200
 - C. 42,000
 - D. 2,400
5. $19 \times 30 =$ _____
 - A. 57
 - B. 1,930
 - C. 273
 - D. 570
6. $36 \times 100 =$ _____ [El-Menia 24]
 - A. 36
 - B. 360
 - C. 3,600
 - D. 36,000
7. $5 \times 400 =$ _____ [Kafr El-Sheikh 24]
 - A. 200
 - B. 20,000
 - C. 2,000
 - D. 20
8. $4 \times$ _____ $= 240$ [Kafr El-Sheikh 24]
 - A. 40
 - B. 60
 - C. 20
 - D. 80
9. $2,000 = 2 \times$ _____ [Kafr El-Sheikh 24]
 - A. 1,000
 - B. 100
 - C. 10
 - D. 1
10. $20 \times 5 = 2 \times$ _____ [Kafr El-Sheikh 24]
 - A. 100
 - B. 50
 - C. 30
 - D. 60
11. If $3 \times 55 = 165$, then $30 \times 550 =$ _____ [El-Menia 24]
 - A. 165
 - B. 1,650
 - C. 16,500
 - D. 165,000
12. Mina runs 12 hours every week. What is the number of running hours in 10 weeks ?
 - A. 12
 - B. 102
 - C. 120
 - D. 22
13. Mona made 10 bracelets. There are 13 beads on each bracelet. How many beads are there on all 10 bracelets ?
 - A. 103
 - B. 113
 - C. 130
 - D. 1,300

CONCEPT 2

Dividing by 1-Digit Divisors



► Lesson 6

Exploring Remainders

Learning Objectives:

- Students will identify the dividend, divisor, and quotient of a division problem.
- Students will solve division problems.
- Students will explain what a remainder represents in a division problem.

► Lesson 7

Patterns in Division

Learning Objectives:

- Students will use place value, multiplication facts, and patterns with zeros to divide multiples of 10, 100 and 1,000 by one-digit divisors.

► Lesson 8

The Area Model and Division

Learning Objectives:

- Students will use area models to represent and solve division problems.

► Lessons 9&10

The Partial Quotients Algorithm
The Standard Division Algorithm

Learning Objectives:

- Students will use the partial quotients algorithm to divide dividends with up to four digits by one-digit divisors.
- Students will estimate quotients using properties of place value and patterns in multiplication and division.
- Students will use the standard algorithm to solve division problems.

► Lesson 11

Division and Multiplication

Learning Objectives:

- Students will use properties of place value to accurately record quotients.
- Students will use the relationship between multiplication and division to check the accuracy of quotients.

Fast Fact

Cheetah is the fastest land animal in the world. A cheetah can reach **112 kilometers** per hour. If a cheetah ran for quarter an hour at its fastest speed, how far could it run ?

Exploring Remainders

Learn

Three friends are playing a game of dominoes. There are 28 dominoes in the set. If each player receives the same number of dominoes, how many dominoes will each player get? How many dominoes will be left over?

- This problem would be solved using **division**. Sometimes a number cannot be divided evenly. The amount left over is called the **remainder**.

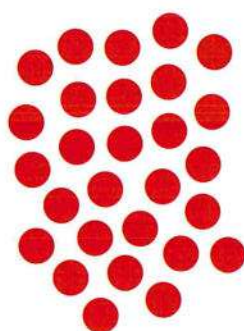


Divide : 28 by 3.

Write $28 \div 3$

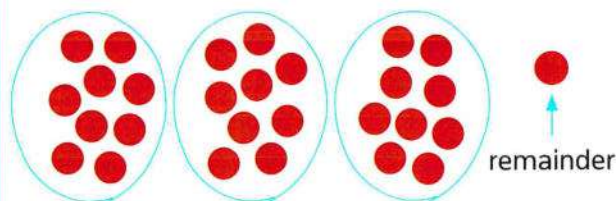
Step 1

Use 28 counters



Step 2

Draw 3 circles. Divide the 28 counters into 3 equal groups. The counter left over is the remainder.



The quotient is 9 and the remainder is 1

Then: $\overset{28}{\div} \overset{3}{=} \overset{9}{\text{R}1}$

dividend
divisor
quotient
remainder

So, each player will get 9 dominoes.
There will be 1 domino left over.

Math Hint

The sum of the digit 2 and 8 is 10 and 10 is not existing when skip counting by 3s so, there will be a remainder.

Note that

If the number is divided equally, the remainder is 0

Examples : $27 \div 3 = 9 \text{ R } 0$
 $40 \div 8 = 5 \text{ R } 0$

ERROR
ALERT

If the remainder is greater than the divisor, keep dividing the counters evenly until the remainder is less than the divisor.

Notes for parents :

- Ask your what the numbers in the equation represent in the problem. Label the numbers in the equation with the correct vocabulary words.

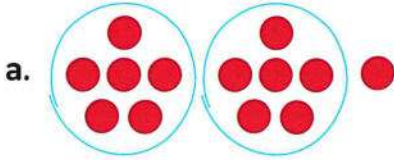
Example 1

Find the quotient and the remainder. You may use counters to model.

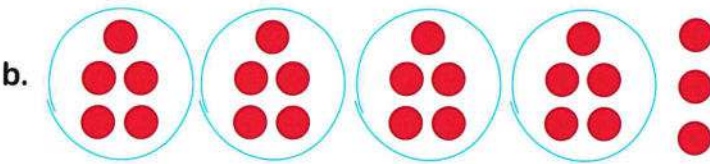
a. $13 \div 2$

b. $23 \div 4$

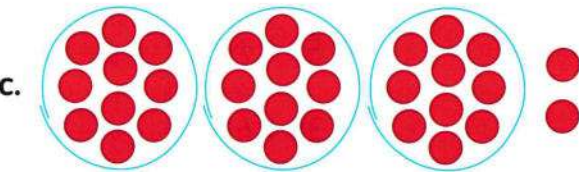
c. $32 \div 3$

Solution 

$13 \div 2 = 6 \text{ R } 1$



$23 \div 4 = 5 \text{ R } 3$



$32 \div 3 = 10 \text{ R } 2$

**Remember**

Division is the inverse of multiplication

$2 \times 6 = 12$

$12 \div 2 = 6$

So

$13 \div 2 = 6 \text{ R } 1$

because $13 = [2 \times 6] + 1$

Note that

The remainder is always less than the divisor.

Example 2

There are 62 students in fourth grade in a school. Each table in the library room seats six students. How many tables are needed to seat all fourth graders?

Solution 

This problem would be solved using division $62 \div 6 = 10 \text{ R } 2$

11 tables are needed [10 tables will be filled and one more table is needed for the 2 extra students] So, $10 + 1 = 11$ tables are needed.

**Check your understanding**

Find the quotient and the remainder. You may use counters to model.

a. $17 \div 5$

b. $26 \div 6$

c. $9 \div 2$

- Your child may be confused by having a remainder in a division problem. He/She may try to place the remainder into an existing group or into an additional group, both leading to unequal sharing.

Exercise 32

on lesson 6

Exploring Remainders

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

From the school book

1. Find each quotient and remainder. Complete the following.

a. $11 \div 3 = \square \text{ R } \square$

b. $7 \div 2 = \square \text{ R } \square$

c. $26 \div 4 = \square \text{ R } \square$

d. $51 \div 8 = \square \text{ R } \square$

e. $20 \div 9 = \square \text{ R } \square$

f. $12 \div 5 = \square \text{ R } \square$

2. Find each quotient and remainder.

a. $13 \div 2 = \underline{\hspace{2cm}}$

b. $18 \div 7 = \underline{\hspace{2cm}}$

c. $30 \div 4 = \underline{\hspace{2cm}}$

d. $22 \div 6 = \underline{\hspace{2cm}}$

e. $42 \div 8 = \underline{\hspace{2cm}}$

f. $57 \div 7 = \underline{\hspace{2cm}}$

g. $26 \div 5 = \underline{\hspace{2cm}}$

h. $93 \div 9 = \underline{\hspace{2cm}}$

i. $35 \div 6 = \underline{\hspace{2cm}}$

3. Find each quotient and remainder. Circle all the problems which has 0 left over.

a. $20 \div 7 = \underline{\hspace{2cm}}$

b. $18 \div 9 = \underline{\hspace{2cm}}$

c. $31 \div 8 = \underline{\hspace{2cm}}$

d. $72 \div 9 = \underline{\hspace{2cm}}$

e. $51 \div 5 = \underline{\hspace{2cm}}$

f. $22 \div 2 = \underline{\hspace{2cm}}$

g. $44 \div 6 = \underline{\hspace{2cm}}$

h. $24 \div 3 = \underline{\hspace{2cm}}$

i. $65 \div 10 = \underline{\hspace{2cm}}$

4. Complete.

a. In the equation $315 \div 3 = 105$, the divisor is $\underline{\hspace{2cm}}$

[El-Monofia 24]

b. If $45 \div 5 = 9$, then the divisor is $\underline{\hspace{2cm}}$

[Port Said 24] [Cairo 23]

c. The quotient in $480 \div 10 = 48$ is $\underline{\hspace{2cm}}$

[Souhag 23]

d. If $35 \div 5 = 7$, the digit 5 is called $\underline{\hspace{2cm}}$

[El-Meina 24]

e. $32 \div 5 = 6 \text{ R } \underline{\hspace{2cm}}$

[Cairo 24]

f. $23 \div 5 = 4 \text{ R } \underline{\hspace{2cm}}$

[Cairo 23]

g. $38 \div 6 = \text{_____}$ R 2

[Cairo 23]

h. $22 \div 6 = \text{_____}$ R _____

[Luxor 24] [Kafr El-Sheikh 24]

i. $5 \div 4 = \text{_____}$ Remainder _____

[Alex. 23]

j. $26 \div 5 = \text{_____}$ and the remainder is _____

[Cairo 23]

5. Solve the following problems.

- a.  Saleem brought 15 pies to give to 4 of his friends. How can Saleem share the pies equally? What is left?

- b. Rose has 19 biscuits to give to her 9 friends.
How can Rose share the biscuits equally? What is left?

- c. There are 48 mugs that need to be put in boxes and shipped. Five mugs can fit in each box. How many boxes will be needed to ship the mugs?

- d.  **Going to a Swim Meet.** The swim team is taking a bus to a swim meet. Each bus seats 40 students. Sixty students will attend the meet. How many buses are needed? Use numbers, words, and symbols to explain your thinking.

Challenge

6. Each page of Ahmed's album holds 4 photographs. He filled all 9 pages and still had 3 photos left over.
How many photos did Ahmed have to start with?

Multiple Choice Questions

Choose the correct answer.

1. In the equation $48 \div 6 = 8$, the dividend is _____ [Alex. 24]

- A. 48 B. 6
C. 8 D. 4

2. If $20 \div 6 = 3 \text{ R } 2$, then the divisor is _____ [Giza 24]

- A. 20 B. 3
C. 6 D. 2

3. If $600 \div 10 = 60$, then the divisor is _____ [Cairo 24] [El-Monofia 24]

- A. 1 B. 10
C. 60 D. 600

4. The quotient in $162 \div 9 = 18$ is _____ [El-Monofia 24]

- A. 9 B. 162
C. 18 D. 10

5. If $40 \div 8 = 5$, then 5 is called _____ [Kafr El-Sheikh 24]

- A. divisor B. dividend
C. quotient D. remainder

6. $17 \div 3 = 5 \text{ R } ______$ [El-Menia 24]

- A. 1 B. 2
C. 3 D. 4

7. $29 \div 3 = 9 \text{ R } ______$ [El-Monofia 24]

- A. 2 B. 6
C. 1 D. 3

8. $37 \div 9 = 4$ and remainder _____ [Cairo - Rod El-Farag 23]

- A. 1 B. 3
C. 4 D. 2

9. $11 \div 3 = ______$ [Ismailia 23]

- A. 3 R 1 B. 4 R 1
C. 3 R 2 D. 4 R 2

10. The remainder of dividing 37 by 5 is _____ [Giza 23]

- A. 2 B. 7
C. 5 D. 1

11. The remainder of dividing : $57 \div 8$ equals _____ [Cairo 24]

- A. 1 B. 2
C. 3 D. 4

12. When dividing 27 by 6 the quotient is 4 and the remainder is _____ [Cairo 24]

- A. 6 B. 5
C. 4 D. 3

13. 52 pounds distributed equally among 6 friends, then the remainder is _____ pounds. [Giza - Awseem 23]

- A. 2 B. 4
C. 3 D. 5

14. If 37 oranges are distributed equally among 5 plates, how many oranges will be left? [Cairo 24] [Monofia - Berket El-Sabaa 23]

- A. 5 B. 2
C. 7 D. 0

Learn

Sara's family collected coins, when the jar was full, Sara's father gave the coins to his three daughters. They counted 6,000 coins and shared them equally.

How many coins did each girl get ?

Divide : $6,000 \div 3$

Basic facts, pattern and place value can help you divide.

Use the basic fact $6 \div 3 = 2$

$$6 \div 3 = 2$$

$$60 \div 3 = 20$$

$$600 \div 3 = 200$$

$$6,000 \div 3 = 2,000$$

Three zeroes

Three zeroes

What do you notice about the pattern of zeroes ?



Remember

$$6 \div 3 = 2$$

6 is called the dividend

3 is called the divisor

2 is called the quotient

Example 1

Use patterns to find the quotient.

a. $8 \div 2 =$ _____

$80 \div 2 =$ _____

$800 \div 2 =$ _____

$8,000 \div 2 =$ _____

b. $15 \div 5 =$ _____

$150 \div 5 =$ _____

$1,500 \div 5 =$ _____

$15,000 \div 5 =$ _____

c. $20 \div 4 =$ _____

$200 \div 4 =$ _____

$2,000 \div 4 =$ _____

$20,000 \div 4 =$ _____

Solution

a. 4

40

400

4,000

b. 3

30

300

3,000

c. 5

50

500

5,000

Notes for parents :

- Your child may only look at the place with the highest value and try to divide. For example, with $2,400 \div 3$, he/she may try to solve $2 \div 3$ instead of $24 \div 3$.
- Your child may be confused by how many zeroes to put in a quotient, especially when the basic fact includes a zero. For example, the basic fact for $2,000 \div 4$ is $20 \div 4 = 5$. The quotient is 500 since there are two other zeroes in the dividend.

Example 2

Write the basic fact that you can use to solve these problems. Then solve each problem.

	Problem	Basic Fact	Quotient
a.	$90 \div 3$		
b.	$160 \div 2$		
c.	$5,500 \div 5$		

Solution 

	Problem	Basic Fact	Quotient
a.	$90 \div 3$	$9 \div 3 = 3$	30
b.	$160 \div 2$	$16 \div 2 = 8$	80
c.	$5,500 \div 5$	$55 \div 5 = 11$	1,100

Example 3

Complete each missing number.

a. $140 \div 7 = \boxed{}$

b. $\boxed{} \div 3 = 100$

c. $280 \div \boxed{} = 40$

Solution 

a. 20

b. 300

c. 7

 **Check** your understanding

1. Use patterns and place value to find each quotient.

a. $8 \div 4 = \boxed{}$

b. $18 \div 9 = \boxed{}$

c. $3 \div 3 = \boxed{}$

$80 \div 4 = \boxed{}$

$180 \div 9 = \boxed{}$

$30 \div \boxed{} = 10$

$800 \div 4 = \boxed{}$

$1,800 \div 9 = \boxed{}$

$\boxed{} \div 3 = 100$

$8,000 \div 4 = \boxed{}$

$18,000 \div 9 = \boxed{}$

$3,000 \div 3 = \boxed{}$

2. How can you use $16 \div 4 = 4$ to help you find $160 \div 4$?

Notes for parents :

- Make sure your child recognized that the number of zeroes in the dividend is the same as the number of zeroes in the quotient unless the basic fact has a zero in it.

Exercise

33

on lesson 7

Patterns in Division

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Use patterns and place value to find each quotient.

a. $6 \div 2 = \boxed{}$

$60 \div 2 = \boxed{}$

$600 \div 2 = \boxed{}$

$6,000 \div 2 = \boxed{}$

b. $18 \div 3 = \boxed{}$

$180 \div 3 = \boxed{}$

$1,800 \div 3 = \boxed{}$

$18,000 \div 3 = \boxed{}$

c. $42 \div 6 = \boxed{}$

$420 \div 6 = \boxed{}$

$4,200 \div 6 = \boxed{}$

$42,000 \div 6 = \boxed{}$

2. **Division Patterns** Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems.

The first problem in the table is an example that is filled in for you.

Equation	Basic [Related] Fact	Quotient
$600 \div 3$	$6 \div 3 = 2$	200
$150 \div 5$		
$1,200 \div 6$		
$200 \div 4$		
$700 \div 7$		
$6,400 \div 8$		
$4,500 \div 9$		
$270 \div 3$		

3. Find each quotient.

a. $27 \div 3 = \underline{\hspace{2cm}}$

[Cairo – El-Salam 23]

d. $270 \div 3 = \underline{\hspace{2cm}}$

[Port Said 24]

g. $280 \div 4 = \underline{\hspace{2cm}}$

[Kafr El-Sheikh 24]

j. $2,400 \div 3 = \underline{\hspace{2cm}}$

m. $30,000 \div 6 = \underline{\hspace{2cm}}$

b. $54 \div 9 = \underline{\hspace{2cm}}$

e. $150 \div 5 = \underline{\hspace{2cm}}$

h. $490 \div 7 = \underline{\hspace{2cm}}$

k. $4,000 \div 4 = \underline{\hspace{2cm}}$

n. $81,000 \div 9 = \underline{\hspace{2cm}}$

[Kafr El-Sheikh 24] [Cairo – El-Nozha 23]

c. $160 \div 8 = \underline{\hspace{2cm}}$

f. $550 \div 5 = \underline{\hspace{2cm}}$

i. $2,700 \div 3 = \underline{\hspace{2cm}}$

l. $6,300 \div 7 = \underline{\hspace{2cm}}$

o. $24,000 \div 4 = \underline{\hspace{2cm}}$

[Giza – Awseem 23]

[El-Monofia 24]

[Cairo 23]

4. Complete the missing numbers.

a. $18 \div \square = 6$

b. $120 \div \square = 20$

c. $630 \div \square = 90$

d. $70 \div \square = 10$

e. $\square \div 3 = 30$

f. $\square \div 4 = 700$

g. $1,600 \div \square = 800$

h. $3,200 \div \square = 400$

i. $4,500 \div \square = 500$

j. $\square \div 9 = 9,000$

k. $\square \div 3 = 8,000$

l. $\square \div 1 = 9,000$

m. $\square \div 5 = 5,000$

n. $\square \div 6 = 8,000$

o. $\square \div 7 = 6,000$

5. Solve the following problems.

- a. Mrs. Farida's class is 60 minutes long. She wants to divide her class time into 3 equal periods. How long will each period be ?

- b. An organization donated 120 books for a school, the books is equally distributed among 12 classes, how many books in each class ?

[Cairo 24]

- c. Bassem is reading a book of 180 pages. If he reads 9 pages per day, how long will it take him to finish the book ?

- d. At a primary school, the students collected 3,000 pounds as a donation to kids Hospital. Each student donated 5 pounds. How many students donated ?

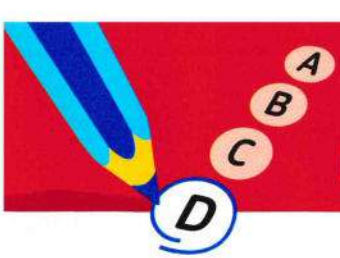
e. Riding the Metro

There are 8,100 people that need to get to work on Monday morning at 7:00 a.m. They all want to take the metro to work. There are 9 cars on each metro. If 90 people can fit in each car, can all the people take the same metro to work ? Explain your thinking using numbers, words and symbols.



Challenge

6. A class wants to plant 450 flowers for Earth Day, in equal rows. If they plant 50 rows, how many flowers are in each row ?



Multiple Choice Questions

Choose the correct answer.

1. $80 \div 2 =$ _____

- A. 4 B. 40
C. 400 D. 160

2. $270 \div 3 =$ _____

[Port Said 24]

- A. 9 B. 71
C. 710 D. 90

3. $180 \div 2 =$ _____

[Alex. 23]

- A. 9 B. 19
C. 90 D. 80

4. $480 \div 4 =$ _____

[El-Monofia 24]

- A. 140 B. 210
C. 120 D. 100

5. $550 \div 5 =$ _____

[Cairo - El-Nozha 23]

- A. 101 B. 100
C. 110 D. 11

6. $3,000 \div 3 =$ _____

- A. 1 B. 10
C. 100 D. 1,000

7. $2,400 \div 6 =$ _____

[Giza 24]

- A. 500 B. 400
C. 60 D. 40

8. $4,500 \div 5 =$ _____

[El-Menia 24]

- A. 9 B. 90
C. 900 D. 9,000

9. $4,000 \div 8 =$ _____

[Alex. 24]

- A. 5 B. 50
C. 500 D. 5,000

10. $24,000 \div 4 =$ _____

[El-Menia 24]

- A. 60 B. 600
C. 6,000 D. 60,000

11. $320 \div$ _____ $= 40$

- A. 8 B. 80
C. 800 D. 8,000

12. _____ $\div 7 = 300$

- A. 21 B. 210
C. 2,100 D. 21,000

13. $63 \text{ tens} \div 7 =$ _____ tens

- A. 9 B. 90
C. 900 D. 9,000

14. _____ $\text{hundreds} \div 5 = 20 \text{ tens}$

- A. 1 B. 10
C. 100 D. 1,000

The Area Model and Division

Learn

Bassem's family drove 615 kilometers in 3 days. They drove the same number of kilometers every day.

How many kilometers did they drive per day ?

Divide : $615 \div 3$

You can use an area model for division.



Step 1

Draw a long rectangle and write 3 on the smaller left side of the rectangle.

3



Think

$$615 = 600 + 15$$

Step 2

Since $3 \times 200 = 600$, then 600 is a multiple of 3 which is the divisor in this problem.

Draw a vertical line inside the rectangle. Write $3 \times 200 = 600$ inside the section of the model and 200 underneath.

3

$$3 \times 200 = 600$$

200



Remember

Area of rectangle
= length $\times$ width

Step 3

Since $3 \times 5 = 15$, then 15 is a multiple of 3 which is the divisor in this problem. Write $3 \times 5 = 15$ inside the empty section of the model and 5 underneath.

3

$$3 \times 200 = 600$$

$$3 \times 5 = 15$$

200

5

R 0

Notes for parents :

- Your child may get confused with how many zeroes to place at the end of a product. For example, he/she may write $7 \times 3,000 = 2,100$ instead of $7 \times 3,000 = 21,000$. Your child may also write $4 \times 500 = 200$ instead of $4 \times 500 = 2,000$

Step 4

Check your answers and there is no left over.

Add the areas : $600 + 15 = 615$ R 0 [no remainder]

Add the sides : $200 + 5 = 205$

then : $615 \div 3 = 205$

They drove 205 kilometers per day for 3 days.

**Example**

Draw an area model to solve each problem.

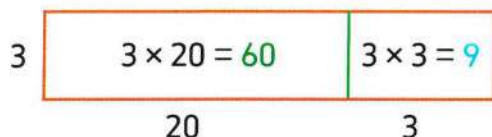
a. $69 \div 3$

b. $825 \div 4$

c. $3,600 \div 6$

Solution

a. Think: $69 = 60 + 9$

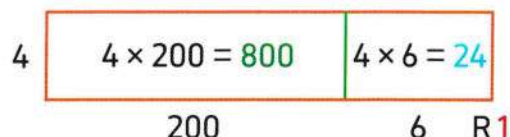


Add the areas : $60 + 9 = 69$ R 0 [no remainder]

Add the sides : $20 + 3 = 23$

So, $69 \div 3 = 23$

b. Think: $825 = 800 + 25$, $25 = 24 + 1$



Add the areas : $800 + 24 + 1 = 825$

Add the sides : $200 + 6$ R 1 = 206 R 1

So, $825 \div 4 = 206$ R 1

c. 6

$6 \times 600 = 3,600$
600

So, $3,600 \div 6 = 600$ [no remainder]



Remember

Check the left over in each problem.

Check your understanding

Use the area to model the following problem.

$535 \div 5$



- Your child may have difficulty determining which multiples to use to start decomposing a dividend when using an area model. It is most effective and efficient to start with multiplying the divisor by 10, 100 or 1,000. For example, for $256 \div 8$, it is helpful to begin with $8 \times 10 = 80$ and to work up to 256.

Exercise

34

on lesson 8

The Area Model and Division

● REMEMBER ● UNDERSTAND ● APPLY ● PROBLEM SOLVING

 From the school book

1. Use the area model to solve each of the following.

a. $64 \div 2$

b. $85 \div 4$

c. $217 \div 5$

d. $159 \div 3$

e. $636 \div 6$

f. $484 \div 8$

2. Use the area model to solve the problems. Show your work.

a. $48 \div 4$

b. $67 \div 3$

c. $246 \div 6$

[Alex. 23]

d. $1,596 \div 3$

[El-Menia 24]

3. Solve each problem using an area model.

- a. Sylvia is sharing her muffins. If she shares 63 muffins among 3 groups of people, what is the share of each group?



- b.  An organization donated 89 books to a school. The books will be shared among 6 classrooms. How many books will each classroom get?



- c.  Rashida saved 545 L.E. to buy a toy car. She did this by saving 5 L.E. every day she worked around her neighborhood. How many days did she have to work to save enough money to buy a toy car?



- d.  Amir bought a book of stickers. There were 92 stickers in the book. He wanted to give them to 4 of his friends. How many stickers will each of his friends get?



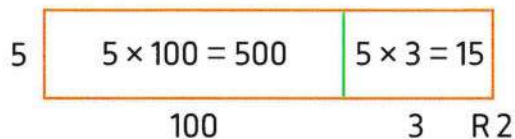
- e.  **Writing About Math.** There are 492 cars that need to park at the stadium. The stadium has 4 parking lots. The stadium wants the same number of cars to park in each lot. How could you use the previous problem to help you solve $492 \div 4$? Use words, numbers and symbols to explain your thinking.

Multiple Choice Questions

Choose the correct answer.

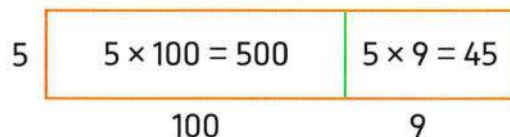
1. In the opposite area model, which choice best represents the problem?

A. $515 \div 5$ B. $502 \div 5$
C. $512 \div 5$ D. $517 \div 5$



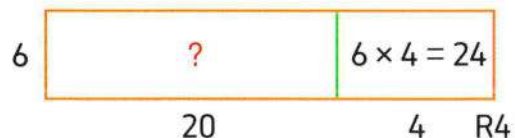
2. Using the following area model, the quotient equals _____ [El-Monofia – Berket El-Sabaa 23]

A. 545 B. 109
C. 100 D. 9



3. Which number best completes the area model to find $148 \div 6$?
The value of ? is _____

A. $6 \times 2 = 12$ B. $6 \times 20 = 120$
C. $20 + 4 = 24$ D. $20 + 4 + 2 = 26$



4. Maha use the opposite model of rectangle area to find the result of $369 \div 3$, then M = _____

A. 123 B. 9
C. 3 D. 396



[Cairo – El-Salam. 23]

5. $312 \div 3 =$ _____ [Giza 23]

A. 14 B. 13
C. 401 D. 104

6. $606 \div 6 =$ _____ [Alex. 23]

A. 101 B. 11
C. 100 D. 16

7. $963 \div 3 =$ _____ [Beheira – Hosh Essa 23]

A. 321 B. 333
C. 222 D. 111

8. $240 \div 4 =$ _____ [Beheira 23]

A. 6 B. 60
C. 8 D. 40

9. $202 \div 2 =$ _____ [Alex. 24]

A. 2 B. 1 C. 101 D. 10

10. A chicken farmer uses egg cartons made from recycled material. If 6 eggs fit into each carton, how many cartons will he need for 312 eggs?

A. 50 cartons B. 51 cartons C. 52 cartons D. 53 cartons

Lessons 9&10

- The Partial Quotients Algorithm
- The Standard Division Algorithm

Learn 1 The partial quotients algorithm

Bassem packs the cakes in groups of 4 to sell in his market.

If an order calls for 898 cakes,
how many packages will Bassem need ?



Divide : 898 by 4

1. Draw a line as shown in the figure.

$$\begin{array}{r} \text{Divisor} \quad \text{Dividend} \\ 4 \overline{) 898} \end{array}$$

2. Look at the dividend, start from the left there are 8 in the hundreds place = 800
 - 800 is a multiple of 4 because $4 \times 200 = 800$
 - Then write 200 to the right of the line [part of the quotient].

$$\begin{array}{r} 4 \overline{) 898} \\ 4 \overline{) 898} 200 \end{array}$$

3. Write 800 under the dividend and subtract from 898, you will get 98.

$$\begin{array}{r} 4 \overline{) 898} 200 \\ - 800 \\ \hline 98 \end{array}$$

4. Write a multiple of 4 that is under 98 and subtract [note $4 \times 10 = 40$], then write 10 to the right of the line as a part of quotient.

$$\begin{array}{r} 4 \overline{) 898} 200 \\ - 800 \\ \hline 98 \\ - 40 \\ \hline 58 \end{array}$$

Notes for parents :

- Remind your child to start division from the left.

5. Repeat writing a multiple of 4 under 58 and subtract [note $4 \times 10 = 40 < 58$] and write 10 as a part of quotient to the right of the line.

$$\begin{array}{r} 4 \overline{) 898} \quad 200 \\ - 800 \\ \hline 98 \quad 10 \\ - 40 \\ \hline 58 \quad 10 \\ - 40 \\ \hline 18 \end{array}$$

6. Write a multiple of 4 that is close to 18 [note $4 \times 4 = 16 < 18$], then write 16 under 18 and subtract and write 4 as a part of quotient to the right of the line.

- Then the quotient $= 200 + 10 + 10 + 4$
 $= 224$
- Then $898 \div 4 = 224$ and the remainder $= 2$

Note that

4 does not divide 898 equally because there is a remainder $= 2$

$$\begin{array}{r} 4 \overline{) 898} \quad 200 \\ - 800 \\ \hline 98 \quad 10 \\ - 40 \\ \hline 58 \quad 10 \\ - 40 \\ \hline 18 \quad 4 \\ - 16 \\ \hline 2 \end{array}$$

remainder

Notes

- Always the remainder must be less than the divisor.
- The dividend $=$ divisor $\times$ quotient $+$ remainder

Example 1

Divide.

a. $78 \div 6$

b. $658 \div 3$

c. $8,785 \div 7$

Solution 

$$\begin{array}{r} 6 \overline{) 78} \quad 10 \\ - 60 \\ \hline 18 \quad 3 \\ - 18 \\ \hline 0 \end{array}$$

$$78 \div 6 = 10 + 3 = 13$$

$$\begin{array}{r} 3 \overline{) 658} \quad 200 \\ - 600 \\ \hline 58 \quad 10 \\ - 30 \\ \hline 28 \quad 9 \\ - 27 \\ \hline 1 \end{array}$$

$$658 \div 3 = 200 + 10 + 9 = 219$$

and the remainder $= 1$

$$\begin{array}{r} 7 \overline{) 8,785} \quad 1,000 \\ - 7,000 \\ \hline 1,785 \quad 200 \\ - 1,400 \\ \hline 385 \quad 50 \\ - 350 \\ \hline 35 \quad 5 \\ - 35 \\ \hline 0 \end{array}$$

$$8,785 \div 7 = 1,000 + 200 + 50 + 5 = 1,255$$

Notes for parents :

- Your child may use any multiple of divisor to divide.

Learn 2 Estimating quotients

- Sometimes you only need to find an estimation.
- One way to estimate quotients is to substitute numbers that make mental math simpler.

For Example :

To estimate the quotient of $257 \div 6$, do as follows :

First

The dividend 257 is between 240 and 300.

[Note : 240 and 300 are multiples of the divisor 6].

Second

$240 \div 6 = 40$ and $300 \div 6 = 50$

So, the quotient of $257 \div 6$ is between 40 and 50.



Example 2

Estimate the quotient of $63 \div 4$

Solution

The dividend 63 is between 40 and 80.

, then $40 \div 4 = 10$ and $80 \div 4 = 20$

, then the quotient is between 10 and 20.

Check your understanding

1. Use the partial quotient algorithm to divide.

a. $52 \div 3$



b. $783 \div 5$



c. $7,320 \div 6$



2. Estimate each quotient.

a. $37 \div 4$

b. $587 \div 2$

c. $762 \div 9$

- Discuss the purpose of rounding versus using basic facts to estimate by asking your child which method makes the problem easier to calculate mentally. Demonstrate how using a basic fact makes estimating easier for $257 \div 6$ by having your child try to find each of these quotients mentally : $300 \div 6$, $240 \div 6$.
- Make sure your child use basic facts and place-value pattern to divide.

Learn 3 The standard division algorithm

Students in the third, fourth and fifth grades made 525 origami animals to display in the library. If each grade made the same number of animals, how many animals did each grade make?

Divide : $525 \div 3$

or $3 \overline{) 525}$



Origami animals

Origami is the Japanese art of folding paper into different shapes.

Step 1

Divide the hundreds.

$$\begin{array}{r} 1 \\ 3 \overline{) 525} \\ - 3 \\ \hline 2 \end{array}$$

Divide $5 \div 3$
Multiply 1×3
Subtract $5 - 3$
Compare $2 < 3$



Remember

After you divide the hundreds, tens or ones place, the remainder should always be less than the divisor.

Step 2

Bring down the tens.
Divide the tens.

$$\begin{array}{r} 17 \\ 3 \overline{) 525} \\ - 3 \\ \hline 22 \\ - 21 \\ \hline 1 \end{array}$$

Bring down the tens.
Divide $22 \div 3$
Multiply 7×3
Subtract $22 - 21$
Compare $1 < 3$

Step 3

Bring down the ones.
Divide the ones.

$$\begin{array}{r} 175 \\ 3 \overline{) 525} \\ - 3 \\ \hline 22 \\ - 21 \\ \hline 15 \\ - 15 \\ \hline 0 \end{array}$$

Bring down the ones.
Divide $15 \div 3$
Multiply 5×3
Subtract $15 - 15$
Compare $0 < 3$

Check Multiply

$3 \times 175 = 525$
The product equals the dividend

So, each grade made 175 origami animals.

Other Examples :

a. With a remainder

$$\begin{array}{r} 168 \text{ R } 4 \\ 5 \overline{) 844} \\ - 5 \\ \hline 34 \\ - 30 \\ \hline 44 \\ - 40 \\ \hline 4 \end{array}$$

Check: $168 \times 5 = 840$
Multiply, then add the remainder
 $840 + 4 = 844$
4 is less than 5, so it is the remainder.

b. Zero in the dividend

$$\begin{array}{r} 117 \\ 6 \overline{) 702} \\ - 6 \\ \hline 10 \\ - 6 \\ \hline 42 \\ - 42 \\ \hline 0 \end{array}$$

Check: $117 \times 6 = 702$



The order of division is as follows :

Divide
Multiply
Subtract
Compare
Bring down

Repeat this order until the division is complete.

Notes for parents :

- To help your child remember all steps in the division algorithm, let him/her use the following memoric or make up one of his/her own: Don't Make Silly Careless Blunders (Divide. Multiply. Subtract. Compare. Bring down).

Example 3Divide : $1,765 \div 4$ **Solution** 

Steps : Divide , multiply , subtract , compare , bring down.

Step 1	Step 2	Step 3
$\begin{array}{r} 04 \\ 4 \overline{) 1,765} \\ - 16 \\ \hline 1 \end{array}$ Divide $1 \div 4$ $1 < 4$ Then write 0 over 1 and divide $17 \div 4$ Subtract $17 - 16$ Compare $1 < 4$	$\begin{array}{r} 044 \\ 4 \overline{) 1,765} \\ - 16 \\ \hline 16 \\ - 16 \\ \hline 0 \end{array}$ Bring down the tens Bring down 6 Divide $16 \div 4$ Multiply 4×4 Subtract $16 - 16$ Compare $0 < 4$	$\begin{array}{r} 0441 \text{ R}1 \\ 4 \overline{) 1,765} \\ - 16 \\ \hline 16 \\ - 16 \\ \hline 05 \\ - 4 \\ \hline 1 \end{array}$ Bring down the ones Bring down 5 Divide $5 \div 4$ Multiply 1×4 Subtract $5 - 4$ Compare $1 < 4$ The remainder = 1

Then, $1,765 \div 4 = 441 \text{ R}1$ **Example 4**Divide : $432 \div 4$ **Solution** 

[Zero in the quotient]

Step 1	Step 2	Step 3
Divide the 4 hundreds. $\begin{array}{r} 1 \\ 4 \overline{) 432} \\ - 4 \\ \hline 0 \end{array}$	Bring down the 3 tens. Divide the 3 tens. $\begin{array}{r} 10 \\ 4 \overline{) 432} \\ - 4 \\ \hline 03 \\ - 0 \\ \hline 3 \end{array}$ $3 < 4$, so write a 0 in the quotient.	Bring down the 2 ones. Divide the 32 ones. $\begin{array}{r} 108 \\ 4 \overline{) 432} \\ - 4 \\ \hline 03 \\ - 0 \\ \hline 32 \\ - 32 \\ \hline 0 \end{array}$

Then, $432 \div 4 = 108$  **Check** your understanding

Divide.

a. $525 \div 5$

b. $685 \div 4$

- Remind your child of the division algorithm : divide, multiply, subtract, compare and bring down.
- Remind your child of including the remainder as a part of the answer.

Exercise

35

on lessons 9&10

► The Partial Quotients Algorithm

► The Standard Division Algorithm

REMEMBER

UNDERSTAND

APPLY

PROBLEM SOLVING

From the school book

1. Use the partial quotient algorithm to divide.

a. $72 \div 4$



b. $897 \div 4$



c. $590 \div 5$



d. $892 \div 4$



e. $925 \div 6$



f. $1,216 \div 3$



2. Complete to estimate the quotient.

a. $68 \div 4$

The dividend 68 is between 40 and 80, then $40 \div 4 = \underline{\hspace{2cm}}$, $80 \div 4 = \underline{\hspace{2cm}}$, then the quotient is between $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$

b. $457 \div 3$

The dividend 457 is between 300 and 600, then $300 \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, $600 \div \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$, then the quotient is between $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$

c. $87 \div 2$

The dividend 87 is between $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$, then $\underline{\hspace{2cm}} \div 2 = \underline{\hspace{2cm}}$, $\underline{\hspace{2cm}} \div 2 = \underline{\hspace{2cm}}$, then the quotient is between $\underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$

3. Estimate each quotient.

a. $632 \div 8$

b. $312 \div 4$

c. $762 \div 9$

d. $495 \div 6$

e. $536 \div 8$

f. $3,748 \div 2$

g. $4,681 \div 3$

h. $8,642 \div 5$

4. Copy and complete.

a. $\begin{array}{r} \square 8 \\ 3 \overline{) 54} \\ \underline{- 3} \\ 2 \\ \underline{- 24} \\ 0 \end{array}$

b. $\begin{array}{r} 2 \square \text{ R } 1 \\ 4 \overline{) 85} \\ \underline{- } \\ 0 \\ \underline{- 4} \\ \end{array}$

c. $\begin{array}{r} \square 1 \text{ R } 3 \\ 5 \overline{) 58} \\ \underline{- } \\ 8 \\ \underline{- 5} \\ \end{array}$

d. $\begin{array}{r} \square \square \text{ R } \square \\ 3 \overline{) 41} \\ \underline{- 3} \\ \square \square \\ \underline{- \square} \\ 2 \end{array}$

5. Solve the problems using the standard algorithm.

a. $454 \div 3$

b. $192 \div 6$

c. $778 \div 2$

Work area

--	--	--

d. $912 \div 3$ [Alex. 23]

e. $512 \div 8$ [Kalyoubia 23]

f. $336 \div 8$

[Alex. - Al-Agamy 23]

Work area

--	--	--

g. $368 \div 3$

h. $1,304 \div 4$

i. $4,858 \div 4$

Work area

--	--	--

j. $3,650 \div 5$

k. $1,500 \div 5$

l. $2,385 \div 5$

[Cairo – El-Marg 23]

Work area

--	--	--

6. Amgad has 84 stickers. He distributed them equally among 7 of his friends. What is the share of each one ?

[Cairo – El-Nozha 23]

7. The school administration distributed 625 students equally into 5 floors. What is the number of students in each floor ?

[El-Menia 24]

8. A runner covers 824 meters in 4 hours. Calculate the distance he covers in one hour.

[Ismailia 23]

9. The number of pupils in a school is 963 divided equally among 3 floors .
How many pupils in each floor ?

[Kafr El-Sheikh 24]

10. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in minibuses. Each minibus holds 9 people. How many minibuses will they need in order to get all of them to the pyramids ?

[Aswan 23]

11.  A train has 784 seats for passengers. If there are 7 cars on the train and each car has the same number of seats, how many passengers can sit in each car? Solve the problem using at least two different strategies.



12. Ayman has 2,532 pounds, he divided them equally between his 3 friends, find the share of each of them. [Cairo 24]

Challenge

13. Youssef divided a number between 55 and 60 by 5. The remainder was 4. What number did Youssef divide?





Multiple Choice Questions

Choose the correct answer.

1. From the following division form.

The dividend is _____

[El-Monofia - Berket El-Sabaa 23]

A. 6

B. 823

C. 137

D. 1

$$\begin{array}{r} 6 \overline{) 823} \quad 100 \\ - 600 \\ \hline 223 \quad 30 \\ - 180 \\ \hline 43 \quad 7 \\ - 42 \\ \hline 1 \end{array}$$

2. $515 \div 5 =$ _____

[Cairo 23]

A. 130

B. 103

C. 13

D. 101

3. $357 \div 3 =$ _____

[Cairo - El-Marg 23]

A. 19

B. 191

C. 911

D. 119

4. $432 \div 3 =$ _____

[Cairo 23]

A. 144

B. 14

C. 1,044

D. 414

5. $428 \div 4 =$ _____

[El-Monofia 24]

A. 17

B. 107

C. 1,007

D. 170

6. $125 \div 5 =$ _____

[Port Said 24]

A. 15

B. 25

C. 52

D. 5

7. $585 \div 5 =$ _____

[Luxor 24]

A. 175

B. 117

C. 115

D. 145

8. $147 \div 7 =$ _____

[Alex. 24]

A. 21 R 3

B. 20

C. 21

D. 22

9. $963 \div 3 =$ _____

[Ismailia 24]

A. 123

B. 302

C. 312

D. 321

10. $357 \div 3 =$ _____

[El-Beheira 24]

A. 19

B. 191

C. 911

D. 119

11. $1,695 \div 5 =$ _____

[Giza 23]

A. 319

B. 339

C. 329

D. 393

12. $6,524 \div 4 =$ _____

[Cairo 24]

A. 1,631

B. 1,151

C. 1,361

D. 1,316

Lesson

11

Division and Multiplication

Learn The relation between multiplication and division

There are 736 crayons wanted to be divided among boxes. Each box holds 4 crayons. How many boxes are needed ?

Divide : $736 \div 4$

Estimation can help decide whether an answer is reasonable. Division can help solve the problem.

Multiplication can help check the answer.



Known that

Multiplication and division by the same number are opposite operations or inverse operations. One operation undoes the other.

First Estimate the quotient

The dividend 736 is between 400 and 800

Note that

400 and 800 are multiples of 4

Then : $400 \div 4 = 100$ and $800 \div 4 = 200$

So, the quotient is between 100 and 200

Second Divide $736 \div 4$

The number of boxes = $736 \div 4$
= 184 boxes

The answer is reasonable.

Third Multiply to check

$184 \times 4 = 736$

So, the needed boxes are 184 boxes.

Notes for parents :

- Ask your child to tell you what is the relation between multiplication and division.

Algorithm strategy

$$\begin{array}{r} 184 \\ 4 \overline{) 736} \\ \underline{- 4} \\ 33 \\ \underline{- 32} \\ 16 \\ \underline{- 16} \\ 00 \end{array}$$

Partial strategy

$$\begin{array}{r} 184 \\ \times 4 \\ \hline 16 \\ + 320 \\ + 400 \\ \hline 736 \end{array}$$

Example 1

Write the division problem that matches the multiplication problem.

$$\begin{array}{r} \text{a.} \quad 34 \\ \times 2 \\ \hline 8 \\ + 60 \\ \hline 68 \end{array}$$

$$\begin{array}{r} \text{b.} \quad 518 \\ \times 3 \\ \hline 24 \\ + 30 \\ + 1,500 \\ \hline 1,554 \end{array}$$

$$\begin{array}{r} \text{c.} \quad 908 \\ \times 7 \\ \hline 56 \\ + 0 \\ + 6,300 \\ \hline 6,356 \end{array}$$

Solution 

a. $68 \div 2 = 34$

b. $1,554 \div 3 = 518$

c. $6,356 \div 7 = 908$

Example 2

Write the division problem that matches the multiplication problem.

a. $14 \times 2 = 28$

b. $161 \times 5 = 805$

c. $105 \times 7 = 735$

d. $320 \times 6 = 1,920$

Solution 

a. $28 \div 2 = 14$

b. $805 \div 5 = 161$

c. $735 \div 7 = 105$

d. $1,920 \div 6 = 320$

**Check** your understanding

Write the division problem that matches the multiplication problem.

$$\boxed{} \div \boxed{} = \boxed{}$$

$$\begin{array}{r} 27 \\ \times 6 \\ \hline 42 \\ + 120 \\ \hline 162 \end{array}$$

Notes for parents :

- Ask your child to explain how can he/she uses the relation between multiplication and division to solve multiplication and division problems.

Exercise

36

on lesson 11

Division and Multiplication

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Write the division problem that matches the multiplication problem.

a.

$$\begin{array}{r} 48 \\ \times 6 \\ \hline 48 \\ + 240 \\ \hline 288 \end{array}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

b.

$$\begin{array}{r} 75 \\ \times 4 \\ \hline 20 \\ + 280 \\ \hline 300 \end{array}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

c.

$$\begin{array}{r} 162 \\ \times 8 \\ \hline 16 \\ + 480 \\ + 800 \\ \hline 1,296 \end{array}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

d.

$$\begin{array}{r} 615 \\ \times 9 \\ \hline 45 \\ + 90 \\ + 5,400 \\ \hline 5,535 \end{array}$$

$$\boxed{} \div \boxed{} = \boxed{}$$

2. Write the division problem that matches the multiplication problem.

a. $53 \times 6 = 318$

$$\boxed{} \div \boxed{} = \boxed{}$$

b. $623 \times 3 = 1,869$

$$\boxed{} \div \boxed{} = \boxed{}$$

c. $325 \times 4 = 1,300$

$$\boxed{} \div \boxed{} = \boxed{}$$

d. $505 \times 5 = 2,525$

$$\boxed{} \div \boxed{} = \boxed{}$$

e. $42 \times 7 = \boxed{}$

$$\boxed{} \div \boxed{} = \boxed{}$$

f. $93 \times 9 = \boxed{}$

$$\boxed{} \div \boxed{} = \boxed{}$$

g. $173 \times 6 = \boxed{}$

$$\boxed{} \div \boxed{} = \boxed{}$$

h. $349 \times 8 = \boxed{}$

$$\boxed{} \div \boxed{} = \boxed{}$$

3. **Place Value and the Quotient** : First, circle the problems you think will have a quotient with fewer digits than the dividend. Then, estimate the quotient and solve each problem using the standard algorithm for division. Think about where to place the first digit in the quotient.

a. $834 \div 3$

The quotient is between _____
and _____

Solution : _____

b. $346 \div 5$

The quotient is between _____
and _____

Solution : _____

c. $562 \div 8$

The quotient is between _____
and _____

Solution : _____

d. $1,266 \div 6$

The quotient is between _____
and _____

Solution : _____

e. $1,429 \div 7$

The quotient is between _____
and _____

Solution : _____

f. $4,590 \div 3$

The quotient is between _____
and _____

Solution : _____

4. Solve the following problems. You may use multiplication to check your answer.

a. $156 \div 4 =$ _____

b. $219 \div 3 =$ _____

c. $27 \div 5 =$ _____

d. $583 \div 6 =$ _____

e. $1,545 \div 5 =$ _____

f. $2,704 \div 3 =$ _____

g. $6,524 \div 4 =$ _____

h. $3,017 \div 3 =$ _____

i. $534 \div 6 =$ _____





Multiple Choice Questions

Choose the correct answer.

1. If $73 \times 8 = 584$, then $584 \div 8 =$ _____

[Giza – Abo El-Nomros 23]

- A. 78 B. 73 C. 83 D. 87

2. The division equation that matches $126 \times 3 = 378$ is _____

- A. $378 - 3 = 126$
B. $378 + 3 = 126$
C. $378 \div 3 = 126$
D. $378 \times 3 = 126$

3. Which expression can be used to check the solution of the opposite division problem ?

$$\begin{array}{r} 28R4 \\ 9 \overline{) 256} \\ \underline{- 18} \\ 76 \\ \underline{- 72} \\ 4 \end{array}$$

- A. 28×9
B. 28×256
C. $28 \times 9 + 4$
D. $28 \times 256 + 4$

4. In the problem $1,866 \div 6$, the quotient is between _____ and _____

- A. 100 and 200
B. 200 and 300
C. 300 and 400
D. 400 and 500

5. What is the value of ? in the opposite division problem ?

$$\begin{array}{r} ? \\ 4 \overline{) 292} \\ \underline{- 28} \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$

- A. 73
B. 73 R1
C. 73 R2
D. 73 R3

6. $48 \div 7 =$ _____

- A. 6 R4 B. 6 R5
C. 6 R6 D. 7 R1

7. $320 \div 4 =$ _____

- A. 80 B. 90
C. 80 R3 D. 90 R3

8. $2,014 \div 2 =$ _____

- A. 17 B. 107 C. 1,007 D. 10,007

9. $2,748 \div 9 =$ _____

- A. 304 R2 B. 304 R3 C. 305 R2 D. 305 R3

Unit Seven Assessment



1. Choose the correct answer.

1. If 37 oranges are distributed equally among 5 plates, how many oranges will be left?
[El-Monofia - Sers El-Layyan 23]
A. 5 B. 2 C. 7 D. 0
2. Which partial product can be used to solve 35×6 ?
[Souhag 23]
A. $[3 \times 6] \times [50 \times 6]$ B. $[30 \times 6] \times [50 \times 6]$
C. $[30 \times 6] + [5 \times 6]$ D. $[3 \times 6] + [5 \times 6]$
3. In the equation $6 \times b = 42$, then $b =$ _____
[Alex. 23]
A. 8 B. 5 C. 6 D. 7
4. The quotient of dividing 922 by 3 is _____ and the remainder is 1. [Cairo - Heliopolis 23]
A. 37 B. 703 C. 307 D. 76
5. $505 \div 5 =$ _____
[Cairo 23]
A. 100 B. 110 C. 101 D. 111
6. $125 \times 5 =$ _____
[Cairo 23]
A. 625 B. 130 C. 605 D. 505
7. If $50 \div 10 = 5$, then the divisor is _____
[El-Behiera - Hosh Essa 23]
A. 40 B. 5 C. 10 D. 50

2. Complete the following.

1. $4 \times 372 = 4 \times$ _____ $+ 4 \times$ _____ $+ 4 \times$ _____
2. $80 \times 50 =$ _____
3. If $2,166 \div 6 = 361$, then the divisor is _____, the dividend is _____ and the quotient is _____
4. _____ $\times 30 = 2,700$
5. $7 \times$ _____ $= 7 \times 600 + 7 \times 50 + 7 \times 3$
6. If $641 \times 7 = 4,487$, then $4,487 \div 7 =$ _____
[Giza 23]
7. In the opposite area model:
369 $\div 3 =$ _____
3

100	20	3

[Port Said 24]
8. $939 \div 3 =$ _____

3. Choose the correct answer.

1. _____ $\times 70 = 2,800$

A. 40

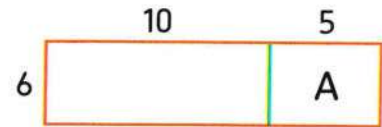
B. 30

C. 50

D. 60

2. The area model represents 15×6

What number belongs in rectangle A?



A. 15

B. 20

C. 30

D. 45

3. $4,000 \div 5$ $2,000 \div 5$

A. >

B. <

C. =

4. $45,000 \div$ _____ $= 9,000$

A. 5

B. 50

C. 500

D. 5,000

5. Ahmed spends 6 hours in school, so if we want to calculate Ahmed's school day by minutes we _____

[El-Menia 24]

A. $6 + 60$ B. 6×24 C. $6 + 24$ D. 6×60

6. 52 pounds distributed equally among 6 friends, then the remainder is _____

[Cairo 23]

A. 2

B. 4

C. 0

D. 5

7. $125 \div 5 =$ _____

[Souhag 23]

A. 5

B. 15

C. 25

D. 625

4. Answer the following.

1. Find the result using any strategy:

$25 \times 3 =$ _____

[El-Menia 24]

2. Use the partial quotient algorithm to divide.

$7,425 \div 5$



3. A city bus is 1,270 centimeters long. What is the length of 4 city buses?

4. Mazen bought 4 books, if the price of each book is 87 pounds.

How much money did he pay?

[Ismailia 24]

THEME TWO

UNIT 8

**Mathematical Operations and
Algebraic Thinking**

Order of Operations

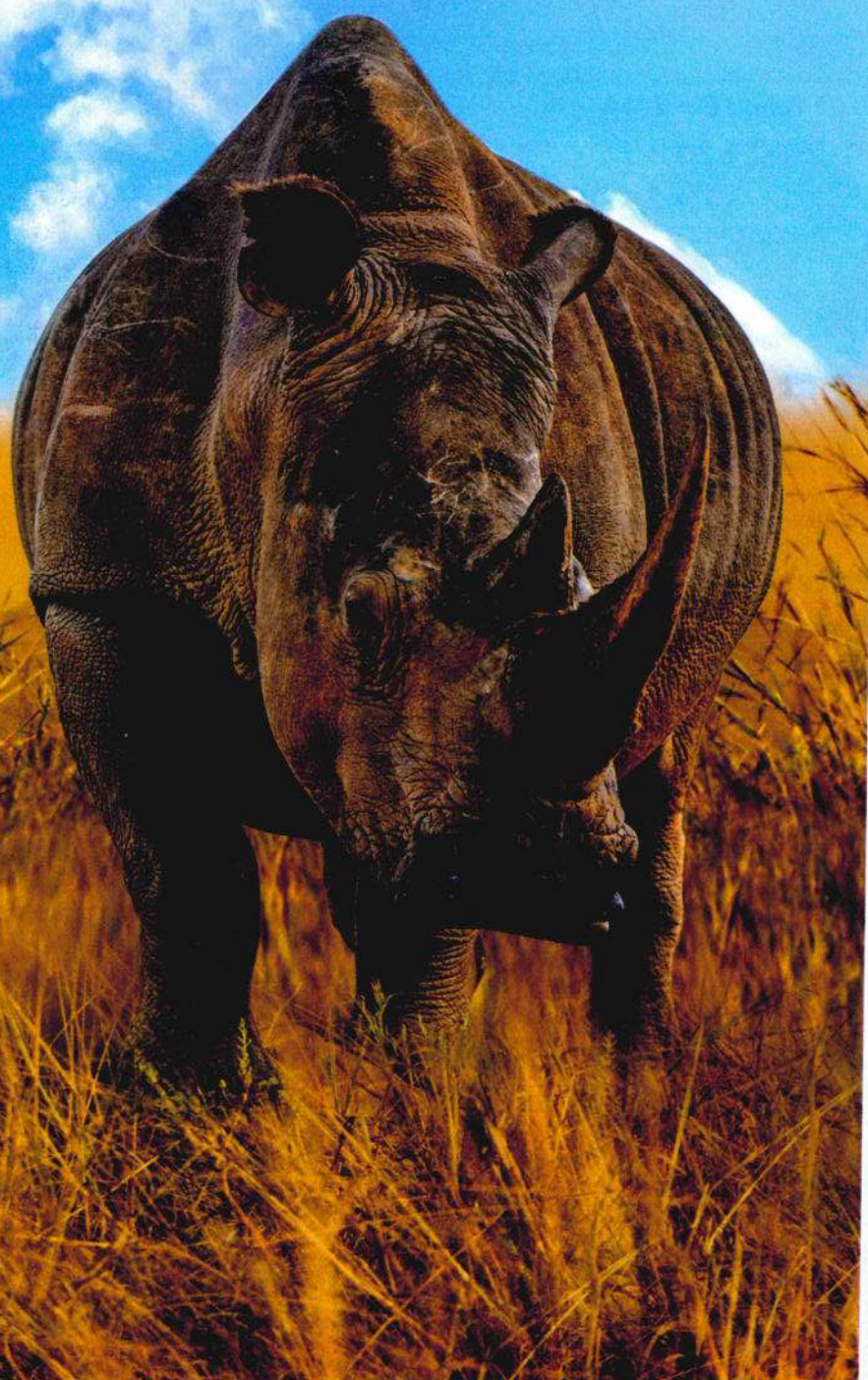
► **Concept 1 :**
Order of Operations



CONCEPT

1

Order of Operations



► Lessons 1&2

Order of Operations
The Order of Operations and
Story Problems

Learning Objectives:

- Students will use the order of operations to solve equations with multiple operations.
- Students will use the order of operations to solve equations with multiple operations.
- Students will write and solve an equation to represent a multistep story problem.

Fast Fact

► Rhino is one of the biggest animals in the world which can weigh a massive 2,500 kg - That's the weight of 30 men ! Sadly ! it's estimated that there are only 29,000 rhinos left in the wild, compared to 500,000 at the beginning of the 20th century.

► Lion often known as the "King of the jungle". Lions usually live in groups of 10 or 15 animals. A female lion needs 5 kg of meat a day. A male needs 7 kg or more a day.

How many kilograms do 3 females lion and 2 males need a day ?

► Order of Operations

► The Order of Operations and Story Problems

Learn 1 Order of operations

Find: $6 - 2 \div 2$

- Sara solved the problem by subtracting first and then dividing. What did she get?
- Bassem solved the problem by dividing first and then subtracting. What did he get?

Sara

Think: $6 - 2 = 4$
 $6 - 2 \div 2 = 4 \div 2$
 $= 2$



Bassem

Think: $2 \div 2 = 1$
 $6 - 2 \div 2 = 6 - 1$
 $= 5$



There seem to be two correct answers.

When solving problems with more than one operation, you need to know which operation to do first. A special set of rules, called the **order of operations**, can be used to solve problems with more than one operation.

Order of Operations

First, perform any operations in parentheses.

Next, multiply and divide from left to right.

Then, add and subtract from left to right.

So, the correct answer to $6 - 2 \div 2$ is 5 and Bassem solved the problem in a correct way.

Notes for parents :

- Ask your child which operation comes first when solving the problems : $12 \div (4 - 1)$ and $6 + 4 \times 5$.

Example 1

Follow the order of operations to find the value of each expression.

a. $[8 - 2] \times 6 = \underline{\hspace{2cm}}$

b. $5 + 10 \div 5 = \underline{\hspace{2cm}}$

c. $3 \times [4 + 6] = \underline{\hspace{2cm}}$

d. $6 - 4 \div 2 = \underline{\hspace{2cm}}$

e. $[5 + 3] \div 2 = \underline{\hspace{2cm}}$

f. $14 \div 7 \times 2 = \underline{\hspace{2cm}}$

Solution

a. $[8 - 2] \times 6$

$= 6 \times 6$

$= 36$

Do what is in the parentheses first, next multiply.

b. $5 + 10 \div 5$

$= 5 + 2$

$= 7$

There are no parentheses, so divide first. Then add.

c. $3 \times [4 + 6]$

$= 3 \times 10$

$= 30$

Do what is in the parentheses first, next multiply.

d. $6 - 4 \div 2$

$= 6 - 2$

$= 4$

There are no parentheses, so divide first. Then subtract.

e. $[5 + 3] \div 2$

$= 8 \div 2$

$= 4$

Do what is in the parentheses first, next divide.

f. $14 \div 7 \times 2$

$= 2 \times 2$

$= 4$

There are no parentheses, so divide and multiply from left to right.

Example 2

Follow the order of operations to find the result.

a. $15 + 24 \div 8 - 2 = \underline{\hspace{2cm}}$

b. $15 + 24 \div [8 - 2] = \underline{\hspace{2cm}}$

Solution

a. $15 + 24 \div 8 - 2$

$= 15 + 3 - 2$

$= 18 - 2$

$= 16$

There are no parentheses, so divide, Then add and subtract from left to right.

b. $15 + 24 \div [8 - 2]$

$= 15 + 24 \div 6$

$= 15 + 4$

$= 19$

Do what is in the parentheses first, next divide. Then add.

 Check your understanding

Use the order of operations to find the value of each expression.

a. $1 + 6 \times 7$

b. $[16 + 4] \div 2$

c. $2 \times 5 - 8 \div 4$

• Ask your child why the values of $15 + 24 \div 8 - 2$ and $15 + 24 \div (8 - 2)$ are different.

Learn 2 The order of operations and story problems

-  Read to Understand
-  Plan
-  Solve
-  Look back and check

Example 3

Maged walked 20 kilometers every week for 3 weeks.

The next week, he walked 15 kilometers.

How many kilometers did he walk over those 4 weeks ?

Solution

$$\begin{aligned} \text{What he walked} &= 20 \times 3 + 15 \\ &= 60 + 15 = 75 \text{ kilometers.} \end{aligned}$$



Example 4

Mohammed ran 8 kilometers on Saturday and twice that distance on Sunday.

He ran 6 kilometers less on Monday than he did on Sunday.

How many kilometers did he run on Monday ?

Solution

$$\begin{aligned} \text{What he ran} &= 8 \times 2 - 6 \\ &= 16 - 6 = 10 \text{ kilometers.} \end{aligned}$$



Example 5

There were 86 people on the pitch. 9 of them were coaches, and the rest wanted to play football.

If they wanted to form teams of 11, how many teams could they form ?

Solution

$$\begin{aligned} \text{Number of teams} &= (86 - 9) \div 11 \\ &= 77 \div 11 = 7 \text{ teams.} \end{aligned}$$



Note that

You should put parentheses to subtract first.



Check your understanding

Noha bought three books for 20 L.E. each. If she had 100 L.E., how much money was left with Noha ?

Notes for parents :

- Ask your child to read each problem carefully and plan to solve each one, then ask him/her to look back to check his/her answer.

Exercise

37

on lessons 1&2

► Order of Operations

► The Order of Operations and Story Problems

REMEMBER UNDERSTAND APPLY PROBLEM SOLVING

From the school book

1. Write correct if the operations are listed in the correct order.

If not, write the correct order of operations.

a. $[9 + 3] \times 4$ Multiply, add

b. $2 \times [3 + 4]$ Add, multiply

c. $20 \div [10 - 6]$ Subtract, divide

d. $27 - 14 \div 2$ Subtract, divide

e. $32 - 8 \div 2$ Divide, subtract

f. $[23 - 11] \div 4 + 2$ Divide, subtract, add

2. Follow the standard order of operations to solve.

a. $26 + 5 \times 10 =$ [Luxor 24]

b. $3 + 8 \div 2 =$ [Alex. 23]

c. $16 \div 4 - 2 =$ [Giza 23]

d. $5 \times 6 - 12 =$

e. $200 - 80 \times 2 =$

f. $8 \times 2 + 13 =$

g. $24 \div 3 + 4 =$ [El-Menia 24]

h. $[30 - 6] \div 3 =$

i. $[28 - 16] \times 4 =$

3. Solve the problems. Show your work.

a. $8 \times 3 + 6 + 2 =$ [Giza 24]

b. $73 - 60 + 15 \div 3 =$

c. $4 + 4 + 5 \times 10 =$

d. $89 + 2 - 4 \times 3 =$

e. $[12 \div 6] + 3 \times 5 =$ [El-Menia 24]

f. $24 \div [7 - 1] - 2 =$ [Cairo 24]

g. $24 \div [4 - 1] - 2 =$ [Cairo 24] [El-Beheira 24]

h. $7 + 12 \times [4 + 6] =$ [Cairo 23]

i. $25 - 3 \times 5 + 2 =$ [Cairo 23]

j. $10 + [8 \times 10] - 20 =$ [Cairo 24]

4.  **Find The Answer** Solve each problem. Locate the correct answer and write the equation under it. If the answer is not listed, rewrite the problem under “Other”.

$2 + 4 \times 6$

$24 - 8 \div 4 + 6$

$15 \div 5 + 4 + 1$

$48 \div 4 + 9$

$36 \div 9 + 4$

$15 - 7 + 2 + 6$

$7 + 70 \div 10 - 2$

$99 - 10 \times 9 + 7$

$8 \times 2 + 24 - 12$

$49 - 7 \times 6 + 4$

$12 - 72 \div 12 + 2$

$24 \times 36 \div 6 + 2$

$8 \times 3 + 6 + 2$

$80 \div 10 + 6 - 3$

$40 - 7 \times 5 + 2$

8

11

16

28

32

Other

5.  **Which Does Not Belong ?** Solve the problems. Then, think about which problem does not belong in the set. Highlight or circle the problem you think does not belong and explain your thinking.

a. $6 \times 4 - 4 =$

b. $100 - 80 \times 1 =$

c. $60 + 20 - 50 =$

d. $2,356 - 2,336 =$

6. Talk About Math

Explain why the values of $8 + 6 \div 2$ and $[8 + 6] \div 2$ are different.

What is the value of each expression ?

7. Who is Correct ?

Saleem and Sarah both solved the problem $74 - 61 + 8 \times 5$.

Saleem says the answer is 105 and Sarah says the answer is 53. Who is correct ?

How do you know ? Help the person who is not correct realize his/her mistake.

8. Number Talk

Solve the problems. Then, rewrite each problem more efficiently.

a. $67 + 67 + 67 + 67 + 67 - 15 =$ _____

b. $568 + 78 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 =$ _____

Story problems

9. Solve the following problems. Remember the order of operations.



- a. Abdullah loves collecting stamps. He received 246 stamps for his birthday. He kept 25 of the stamps and now he wants to give the rest to 6 of his friends. How many stamps will each friend get if they share them equally?

- b. Maha walked 14 kilometers every day for 2 weeks. The next week, she walked 56 kilometers. How many kilometers did she walk over those 3 weeks?

- c. Ashraf has to take the bus to work. It takes 27 minutes to get to the bus stop near his job. Then, he has to walk for 12 minutes from the bus stop to his place of work. How many minutes does Ashraf spend going to work during a 5-day week?



- d. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in minibuses. Each minibus fits 9 people. How many minibuses will they need in order to get everyone to the pyramids?

- e. Sita wants to bake berry muffins. Each muffin will have 6 berries in it. She buys 198 berries from the store. On the way home, she eats 17 of the berries. How many muffins can she make with the berries she has left?

10. Writing My Own Problem Write a story problem that can be represented

by $(50 - 36) \div 4$.



Multiple Choice Questions

Choose the correct answer.

1. $12 + 6 \div 3 =$ _____ [El-Menia 24]



[El-Monofia – Sers El-Layyan 23]

A. 14

B. 6

C. 1

D. 16

2. $5 \times 0 \div 3 =$ _____ [El-Monofia 24]



A. 0

B. 5

C. 8

D. 508

3. $100 - 80 \times 1 =$ _____ [Port Said 24]



A. 2

B. 18

C. 180

D. 20

4. $18 \div 3 + 4 - 2 =$ _____ [Cairo – El-Nozha 23]



A. 8

B. 16

C. 2

D. 0

5. $4 + 10 \times 2 - 1 =$ _____ [Souhag 23]



A. 41

B. 27

C. 23

D. 14

6. $2 + 6 \times 4 - 8 =$ _____ [Cairo – Al-Khalifa and Al-Mokattam 23]



A. 8

B. 10

C. 16

D. 18

7. $[25 + 5] \div 6 + 2 =$ _____ [Port Said 24]



A. 8

B. 7

C. 10

D. 12

8. $20 \div [4 + 1] \times 2 =$ _____ [Ismailia 24]



A. 22

B. 2

C. 8

D. 12

9. $9 + 2 \times [15 \div 5] =$ _____ [Giza 23]



A. 15

B. 21

C. 11

D. 18

10. $24 \div [4 - 1] - 2 =$ _____ [Souhag 23]



A. 6

B. 10

C. 24

D. 48

11. $5 + 5 + 5 + 5 + 5 - 12 =$ _____



A. $5 \times 6 - 12$

B. $20 - 12$

C. $5 \times 5 - 12$

D. $5 \times 5 + 12$

12. Which is the first step in evaluating



$18 - 15 + 3 \times 8 - 2$?

[Ismailia 23]

A. $18 - 15$

B. $15 + 3$

C. 3×8

D. $8 - 2$

13. Which of the following = 6? [Giza 23]



A. $3 \times 1 + 2$

B. $12 + 6 \div 3$

C. $18 - 3 \times 4$

D. $24 \div 6 + 4$

14. Which of the following = 24? [Cairo 23]



A. $3 \times [3 + 5]$

B. $3 \times 3 + 5$

C. $3 + 3 \times 5$

D. $[3 + 3] \times 5$

Unit Eight Assessment



1. Choose the correct answer.

1. $12 + 8 \div 4 =$ _____

[Alex. 24]

A. 5

B. 14

C. 16

D. 15

2. $20 \div 4 - 3 =$ _____

[Port Said 24]

A. 20

B. 5

C. 2

D. 10

3. $3 + 3 \times 3 =$ _____

A. 6

B. 9

C. 12

D. 333

4. $12 + 30 \div 6 =$ _____

[El-Monofia - Quesna 23]

A. 7

B. 17

C. 48

D. 19

5. $[8 + 2] \div 2 =$ _____

[Beni Suef 24] [Cairo - El-Nozha 23]

A. 4

B. 5

C. 7

D. 12

6. $10 - 4 \times 2 =$ _____

[El-Monofia - Sadat 23]

A. 12

B. 2

C. 8

D. 6

7. Noha walked 10 kilometers every day for 2 weeks. The next week, she walked 60 kilometers.

How many kilometers did she walk over those 3 weeks ?

A. 1,340 km

B. 200 km

C. 740 km

D. 80 km

2. Complete the following.

1. $14 \div 7 + 20 =$ _____

2. $5 + 8 \div 2 =$ _____

3. $[3 + 3] \times 4 - 1 =$ _____

4. $24 \div [4 - 1] - 3 =$ _____ [El - Monofia 24]

5. $100 - [4 + 7] \times 9 =$ _____

[Cairo - Heliopolis 23]

6. $32 \div 4 - 6 =$ _____

[Giza - Awseem 23]

7. $40 \div 8 - 3 =$ _____

[Giza 23]

8. $15 + 20 \div 4 =$ _____

[Giza 23]

3. Choose the correct answer.

1. $6 \times 4 - 4 =$ _____

[Cairo - El-Shrouk 23]

A. 15

B. 20

C. 24

D. 64

2. $2 + 5 \times 6 =$ _____ [El-Beheira 23]
 A. 42 B. 32 C. 16 D. 60
3. $2 \times 6 + 8 =$ _____ [Cairo 24]
 A. 20 B. 25 C. 24 D. 22
4. $5 \times 4 + 6 =$ _____
 A. 26 B. 25 C. 50 D. 34
5. $24 \div 6 - 3 =$ _____ [El-Monofia 24]
 A. 8 B. 1 C. 3 D. 9
6. $32 - 8 \div 2 =$ _____ [Alex. 24]
 A. 12 B. 8 C. 28 D. 16
7. $20 \div 5 + 5 - 2 =$ _____ [Cairo 24]
 A. 0 B. 7 C. 2 R 4 D. 8

4. Answer the following.

1. Use the order of operations to solve.

- a. $55 \div 5 + 10 - 1$ [El-Menia 24] b. $4 \times 10 + 25$ [Cairo 24]

2. Find the value.

- a. $2 \times 3 + 20 \div 5$ [Kafr El-Sheikh 24] b. $3 + 8 \div 2$ [Alex. 24]

3. Mona walked 5 km. every day for 2 weeks. The next week, she walked 60 km.

How many kilometers did she walk over those 3 weeks ?

4. Edward has to take the bus to work. It takes 25 minutes to get to the bus stop near his

job. Then, he has to walk for 15 minutes from the bus stop to his place of work.

How many minutes does Edward spend going to work during a 5-day week ?



GLOSSARY



A

a.m. صباحا [قبل الظهر]
A time between 12:00 midnight and 12:00 noon.

add يجمع
To combine or join together; put together two or more quantities.

addend عدد مُضاف
Any number being added. In the equation $6 + 8 = 14$, six and eight are both addends, 14 is the sum.

additive comparison مقارنة باستخدام عملية الجمع
Problems that ask how much more [or less] one amount is than another.

Additive Identity Property خاصية المحايد الجمعي
When you add zero to a number, the sum is that same number.

algorithm خوارزمية
A step-by-step method for computing.

area مساحة
The measure, in square units, of the inside of a plane figure.

area model نموذج مساحة المستطيل
A model of multiplication that shows each place value product.

array مصفوفة
An arrangement of objects in equal rows.

Associative Property of Addition خاصية الدمج في عملية الجمع
Changing the grouping of three or more addends does not change the sum.

Associative Property of Multiplication خاصية الدمج في عملية الضرب
Changing the grouping of three or more factors does not change the product.

B

bar model نموذج شريطي
A model that uses bars to represent known and unknown quantities and the relationship between these quantities.

base قاعدة
Any side of a plane figure. Usually thought of as a side where the figure "sits".

Base Ten numerals أرقام نظام العد العشري
Any of the symbols 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9. The symbols can represent any amount based on a place value system of grouping by tens [also known as digits].

C

capacity سعة
The amount of liquid a container can hold.

centimeter [cm] سنتيمتر [سم]
A metric unit of length equal to $\left[\frac{1}{100}\right]$ of a meter.

common factor عامل مشترك
Any common factor of two or more numbers. Six is a common factor of both 12 and 24.

common multiple مضاعف مشترك
Any common multiple of two or more numbers. Six is a common multiple of both 2 and 3.

Commutative Property of Addition خاصية الإبدال في عملية الجمع
Changing the order of the addends does not change the sum.

Commutative Property of Multiplication خاصية الإبدال في عملية الضرب
Changing the order of the factors does not change the product.

compare يقارن
To decide if one number is greater than, less than, or equal to.

compose يكوّن
To put together smaller numbers to make larger numbers.

Composite number عدد غير أولي
A number greater than 0 that has more than two different factors

Customary system نظام القياس المتعارف عليه

A system of measurement used in the United States. The system includes units for measuring length, capacity, and weight. Nearly everyone else uses the metric system.

D**day** يوم

The length of time it takes the Earth to make a complete rotation. 24 hours = 1 day.

decimeter [dm] ديسيمتر [ديسم]

A metric unit of length. 1 decimeter = 0.1 meter; 10 decimeters = 1 meter. A hand span is about 1 decimeter.

decompose يحلل

To separate number into two or more parts.

determine يَعيّن

To decide or settle upon, figure out.

difference فرق

The amount that remains after one quantity is subtracted from another. The answer in a subtraction problem.

digit رقم

Any of the symbols 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9. [Also known as Base Ten numerals.]

display يعرض

To show, exhibit or demonstrate.

Distributive Property خاصية التوزيع

When one of the factors of a product is a sum, multiplying each addend before adding does not change the product.

divide يقسم

To separate into equal groups and find the number in each group or the number of groups. 56 split into 8 equal groups equals seven in each group, $56 \div 8 = 7$

dividend مقسوم

A number that is divided by another number. 56 is the dividend in the above example.

divisible قابل للقسمة

A number is divisible by another number if the quotient is a counting number without a remainder.

divisor مقسوم عليه

The number by which another number is divided. 8 is the divisor in $56 \div 8 = 7$

E**elapsed time** وقت منقضي

The amount of time that has passed [also known as time interval]. Six hours elapse between 8:00 am and 2:00 pm.

equal يساوي

Having the same value. 2 feet = 24 inches.

equation معادلة

A mathematical sentence with an equal sign.

The amount on one side of the equal sign has the same value as the amount on the other side.

$$4 + 3 = 7$$

estimate يُقدّر

To find a number close to an exact amount, an estimate tells about how much or about how many.

expanded form صيغة ممتدة

A way to write numbers that shows the place value of each digit. $263 = 200 + 60 + 3$

F**fact family** مجموعة حقائق رياضية ذات صلة

A group of related facts that use the same numbers [also known as related facts].

Fact family for 3, 5, 15: $3 \times 5 = 15$; $15 \div 5 = 3$; $5 \times 3 = 15$; $15 \div 3 = 5$

factors عوامل

The whole numbers that are multiplied to get a product. $6 \times 7 = 42$ [6 and 7 are factors.]

factor pairs أزواج عوامل العدد

A set of two whole numbers that when multiplied will result in a given product.

$2 \times 3 = 6$, $1 \times 6 = 6$. The factor pairs for 6 are: 2 and 3, 1 and 6

formula

قانون / قاعدة

A rule that is written as an equation.

$$A = l \times w$$

G

gram [g]

جرام [جم]

The standard unit of mass in the metric system.

$$1,000 \text{ grams} = 1 \text{ kilogram.}$$

The mass of a paperclip is about 1 gram.

greater than [>]

أكبر من

Used to compare two numbers when the first number is larger than the second number.

H

horizontal

أفقي

Parallel to the horizon. Horizontal lines go from left to right or right to left.

hour [hr]

ساعة

A unit of time. 1 hour = 60 minutes;

$$24 \text{ hours} = 1 \text{ day.}$$

Hundreds

مئات

The value of a digit that is the third position from the right when describing whole number place value.

I

identify

يحدد

Recognize or distinguish, figure out what it is, name it.

Identity Property of Multiplication

خاصية المحايد الضربي

The property that states that the product of any number and 1 is that number : $n \times 1 = n$

interpret

يفسر

To explain or tell the meaning of something.

inverse operations

عمليات عكسية

Operations that undo each other. Multiplication and division are inverse operations.

$$8 \times 5 = 40 \text{ and } 40 \div 5 = 8$$

J

justify

يبيرر

To show or prove to be right or reasonable.

K

kilogram [kg]

كيلوجرام [كجم]

A metric unit of mass equal to 1,000 grams.

$$1 \text{ kilogram} = \text{about } 2,2 \text{ pounds.}$$

kilometer [km]

كيلومتر [كم]

A metric unit of length equal to 1,000 meters.

L

length

طول

How long something is. The distance from one point to another. Length is measured in units such as centimeters, meters and kilometers.

One dimension of a 2-dimensional or 3-dimensional figure.

less than [<]

أقل من

Used to compare two numbers when the first number is smaller than the second number.

line plot

مخطط التمثيل بالنقاط

A diagram showing frequency of data on a number line.

liter [L]

لتر

The basic unit of capacity in the metric system.

$$1 \text{ liter} = 1,000 \text{ milliliters.}$$

M

mass

كتلة

The amount of matter in an object, usually measured by comparing with an object of known mass. While gravity influences weight, it does not affect mass.

mental math or mental calculation

حساب عقلي

Calculations that are done in a student's head without pencil and paper, calculators or other aids.

meter [m]

متر [م]

A standard unit of length in the metric system.

metric system

النظام المتري

A system of measurement based on tens. The basic unit of capacity is the liter. The basic unit of length is the meter. The basic unit of mass is the gram.

milliliter [mL]

مليلتر [مل]

A metric unit of capacity.

1,000 milliliters = 1 liter.

This holds about 10 drops or 1 milliliter.

millimeter

ملليمتر [مم]

A metric unit of length.

1,000 millimeters = 1 meter.

minute [min]

دقيقة

A unit used to measure a short amount of time.

There are 60 minutes in one hour.

model or visual model

نموذج أو نموذج مرئي

A picture or representation of a solution, a number or a concept.

month

شهر

A length of time equal to 28, 30 or 31 days.

12 months = 1 year.

multidigit

متعدد الأرقام

Having more than one digit [number]. Seven [7] is a single digit, whereas seventy-two [72] and seven hundred forty-two [742] are multidigit numbers.

multiple

مضاعف

A product of a given whole number and any other whole number. 12 is a multiple of 3 and 4 because $3 \times 4 = 12$

multiplicative comparison

مقارنة باستخدام عملية الضرب

A way to compare quantities using multiplication, as in "This tree is 3 times shorter than that tree".

multiply

يضرب

The operation of repeated addition of the same number. $3 \times 5 = 5 + 5 + 5$

N**number**

عدد

The quantity we associate with a numeral. Often used interchangeably with digit and numeral.

number line

خط الأعداد

A diagram that represents numbers as points on a line.

O**Ones**

آحاد

The value of a digit that is farthest to the right when describing whole number place value.

order

ترتيب

A sequence or arrangement of things.

Order of Operations

ترتيب العمليات

A set of rules that tells the order in which to compute.

1. Do operations in parentheses.
2. Multiply and divide in order from left to right.
3. Add and subtract in order from left to right.

P**p.m.**

مساءً [بعد الظهر]

The time between 12:00 noon and 12:00 midnight.

parentheses

أقواس

Used in mathematics as grouping symbols for operations. When simplifying an expression, the operations within the parentheses are performed first.

partial product

ناتج عملية الضرب بالتجزئة

A method of multiplying in which the value of each digit in a factor is multiplied separately, and then the partial products are added together.

partial quotient

ناتج عملية القسمة بالتجزئة

A method of dividing in which multiples of the divisor are subtracted from the dividend, and then the partial quotients are added together.

pattern

نمط

A repeating or growing sequence or design.

An ordered set of numbers or shapes arranged according to a rule.

perimeter محيط
The distance around the outside of a figure.

period فترة
In a large number, periods are groups of 3 digits separated by commas or by spaces.

place value قيمة مكانية
The value of the place of a digit in a number.

prime number عدد أولي
A whole number greater than 1 that has exactly two different factors, 1 and itself.

product ناتج الضرب
The answer to a multiplication problem.
In $6 \times 7 = 42$, 42 is the product/answer.

Q

quotient خارج القسمة
The answer to a division problem.

R

reasonableness معقولية
An answer that is based on good number sense.

recognize يدرك
identify [someone or something] from having encountered them before; know again, remember.

rectangle مستطيل
A quadrilateral with two pairs of congruent, parallel sides and four equal angles.

regroup إعادة تسمية
To rearrange numbers into groups of 10 when performing mathematical operations.

related facts (fact family) حقائق ذات صلة
Related addition and subtraction facts or related multiplication and division facts. Related facts for 3, 5, 8: $3 + 5 = 8$; $8 - 5 = 3$; $5 + 3 = 8$; $8 - 3 = 5$ [also known as fact family].

remainder باقى القسمة
The amount left over when one number is divided by another.

repeated subtraction طرح متكرر
Subtracting equal groups to find the total amount of groups [also called division].

represent يعرض
To show or model.

round a whole number تقريب عدد صحيح
To identify the nearest Ten, Hundred, Thousand, [and so on] and rename a number so it is easier to mentally add, subtract, multiply, or divide.

rule قاعدة
something that happens every time
[for example : 2, 5, 8, 11 ... the rule is + 3].

S

second (sec) ثانية
A unit used to measure a very short amount of time. There are 60 seconds in one minute.

sequence تسلسل
A set of numbers arranged in a special order or pattern.

sketch رسم تقريبي سريع
A quick, rough drawing.

specify يبيّن
identify clearly and definitely.

square مربع
A parallelogram with four equal angles and four equal sides.

square unit وحدة مربعة
A unit, such as square centimeter, used to measure area.

standard form صيغة قياسية
A common or usual way of writing a number using digits. 12,376 is in standard form.

subtract يطرح
An operation that gives the difference between two numbers. Subtraction can be used to compare two numbers, or to find out how much is left after some is taken away.

sum مجموع
The answer to an addition problem.

T

Tens

عشرات

The value of a digit that is the second position from the right when describing whole number place value.

Thousands

آلاف

The value of a digit that is the fourth position from the right when describing whole number place value.

time interval

فترة زمنية

A duration of a segment of time (also known as elapsed time).

ton

طن

A customary unit of weight. 1 ton [T] = 2,000 pounds. A metric ton, or tonne [t] is a unit of mass equal to 1,000 kilograms (about 2,200 pounds).

two-dimensional

ثنائي الأبعاد

Having length and width.

V

variable

متغير

A letter or symbol that represents a number. $5 \times b = 10$, b is a variable worth 2.

vertical

رأسي

Perpendicular to the horizon. Vertical lines go up and down.

W

week

أسبوع

There are seven days in a week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.

weight

وزن

The measure of how heavy something is.

whole

كامل

All of an object, a group of objects, shape or quantity.

whole numbers

أعداد صحيحة

The numbers 0, 1, 2, 3 and so on, without fractions or decimals.

width

عرض

One dimension of a 2-dimensional or 3-dimensional figure.

word form

صيغة لفظية

A way of using words to write a number. The word form of 12,345 is twelve thousand, three hundred forty-five.

Y

year

عام

The length of time it takes the Earth to revolve around the sun. 12 months = 1 year; 365 days = 1 year; 366 days = 1 leap year.

Z

Zero Property of Multiplication

خاصية الضرب في صفر

The product of any number and zero is zero
 $8 \times 0 = 0$

Mathematics

By a group of supervisors

PARENTS' GUIDE

EL-MOASSER Interactive E-learning Application

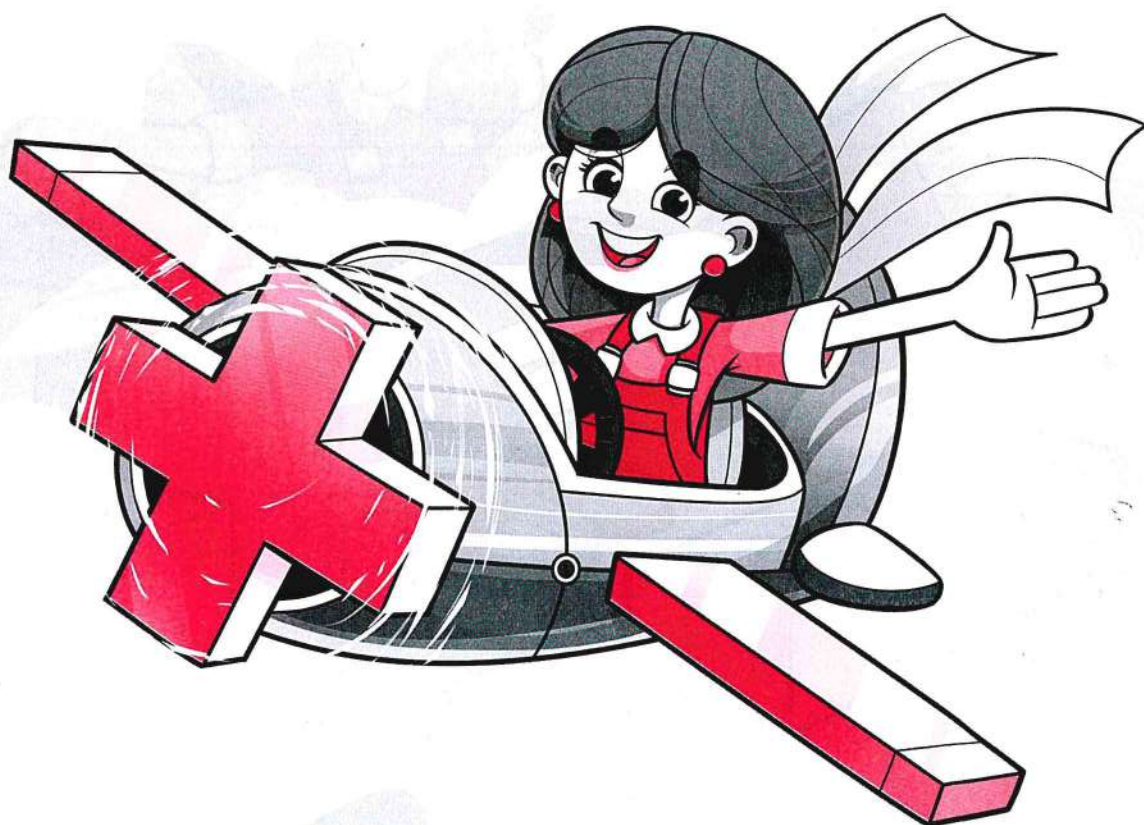


FIRST TERM

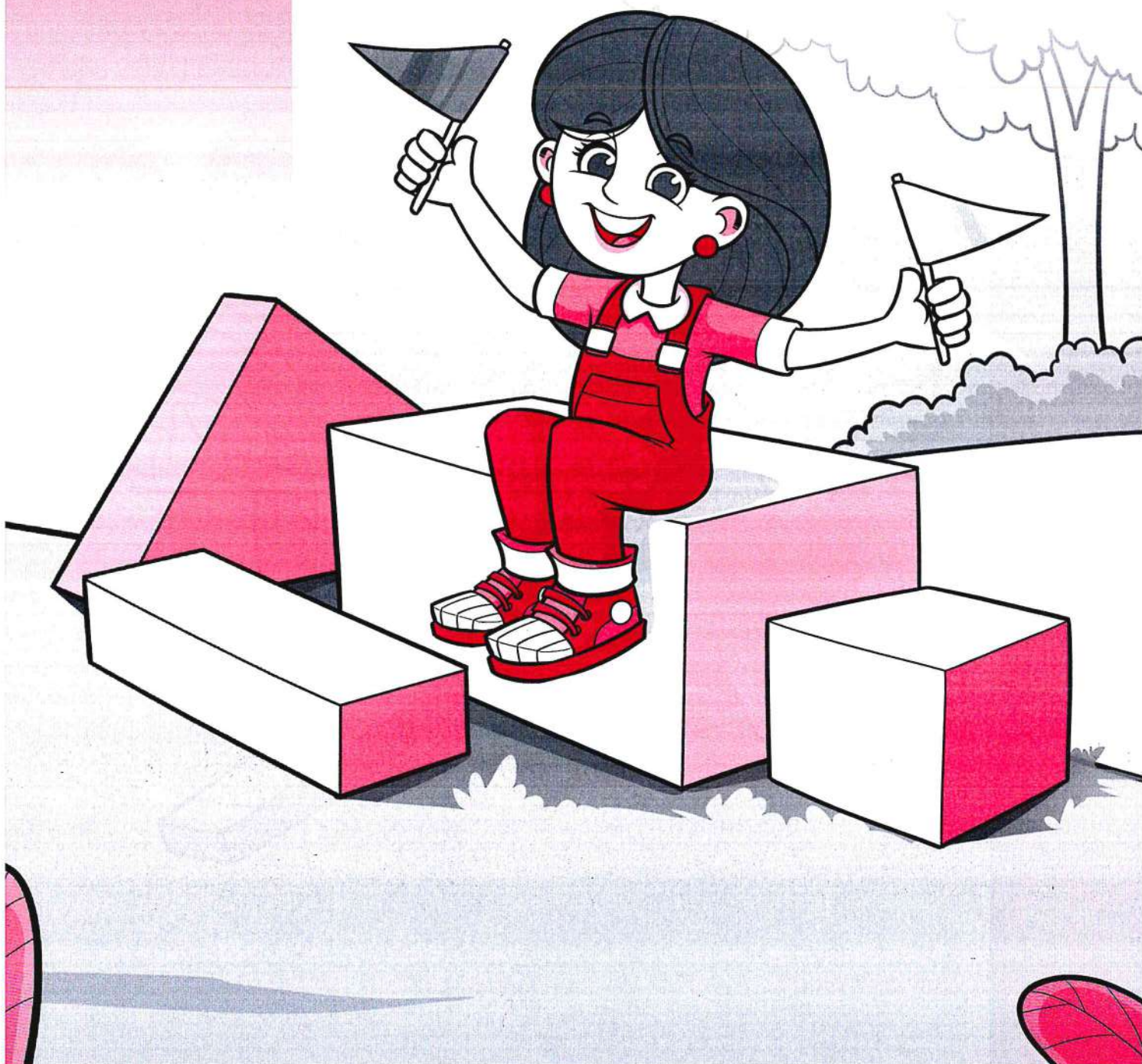
4th
PRIMARY

Contents

- ▶ **Cumulative Assessments**
- ▶ **Monthly Tests**
- ▶ **General Revision**
- ▶ **Directorates Exams**



Cumulative Assessments



Cumulative Assessment

1

On lessons (1 & 2) unit 1

1. Choose the correct answer.

- a. The digit _____ is in the Ten Millions place in the number 346,870,251
A. 8 B. 0 C. 5 D. 4
- b. The value of the digit 3 in the number 23,694,501 is _____
A. 3,000 B. 30,000
C. 300,000 D. 3,000,000
- c. The value of the digit 4 in the number 42,780 is 10 times the value of the digit 4 in which number?
A. 146,703 B. 426,135
C. 34,651 D. 10,400
- d. _____ = 5 milliard, 5 million, 5 thousand, 5.
A. 5,050,050,005 B. 5,005,005,005
C. 5,555 D. 5,005,500,005

2. Complete.

- a. The value of the digit 0 in the number 7,056,219 is _____
- b. The number of hundreds in one million = _____
- c. The place value of the digit 0 in the number 706,421,573 is _____
- d. 58,000 thousands = _____ millions.
- e. 3,400,371,600 = _____ milliard, _____ million, _____ thousand, _____
- f. _____ = seventeen milliard, seventeen.

3. In the number 2,384,165,907, what digit is in the

- | | |
|-------------------------------|--------------------------------|
| a. Thousands place ? _____ | b. Hundreds place ? _____ |
| c. Ten Millions place ? _____ | d. Ten Thousands place ? _____ |
| e. One Milliard place ? _____ | f. Tens place ? _____ |

Cumulative Assessment

2

Till lessons (3 & 4) unit 1

1. Choose the correct answer.

- a. $5,000,000 + 40,000 + 8,000 + 700 + 20 + 3 =$ _____
 A. 5,408,723 B. 5,048,723 C. 5,084,723 D. 5,048,273
- b. $4,800,000 =$ _____ thousands.
 A. 48 B. 480 C. 4,800 D. 480,000
- c. The number _____ has 9 digits.
 A. 36,423,100 B. 8,614,000 C. 125,000,694 D. 167,282
- d. _____ is the compose of $[6 \times 100,000] + [5 \times 10,000] + [3 \times 100] + [4 \times 10]$
 A. 650,340 B. 605,340 C. 650,304 D. 650,034

2. Complete.

- a. 34 millions, 905 thousands, 421 in standard form is _____
- b. The value of 7 in the number 720,358,014 is _____
- c. The expanded form of 5,614,003 is _____ + _____ + _____ + _____
 + _____
- d. 450 thousands = _____

3. Complete the following.

Composed : _____

 Decomposed : _____ + _____ + _____ + $[2 \times 100,000] + [4 \times 1,000]$
 + _____ + $[7 \times 10] + [5 \times 1]$

Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O
6	1	8	—	0	—	3	—	—

Cumulative Assessment

3

Till lessons (5 & 6) unit 1

1. Compare. Write ($<$, $>$ or $=$).

- a. 43,600,287 43 millions ,700 thousands and 286
- b. 1,534,973 $900,000 + 90,000 + 4,000 + 300 + 6$
- c. Seven millions, two hundred forty six thousands 70,000,000
- d. $[5 \times 10,000,000] + [7 \times 1,000,000] + [4 \times 100,000] + [2 \times 1,000] + [6 \times 100]$ 1 milliard

2. Choose the correct answer.

- a. 2,800 thousands $>$ _____
 A. 2,800 hundreds B. 28,000 hundreds
 C. 28 millions D. 2 milliards
- b. The place value of 6 in 6,482,759,310 is _____
 A. Millions B. Ten Millions C. Hundred Thousands D. Milliards
- c. The number 42,365,978 has _____ digits.
 A. 10 B. 9 C. 8 D. 7
- d. The missing digit such that $8,000 + 100 + 80 + 5 > 8, \square 85$ is _____
 A. 0 B. 1 C. 2 D. 3
- e. Which of the following statements is NOT TRUE ?
 A. $6,947 < 6,974$ B. $200,461 > 30,499$
 C. $9,999 > 10,000$ D. $75,164 > 75,146$
- f. Which of the following numbers is smaller than "7,000,000 + 300,000 + 500 + 69"?
 A. 7,400,569 B. 7,003,569 C. 9,200,569 D. 10,300,569

3. Write a number that is less in the Ten Thousands place than 53,782 _____

4. Create a number that is smaller in the Ten Millions place than 745,864,251 _____

5. Create a number that is greater in the Thousands place than six milliard , six million , eight thousand , eight hundred.

Cumulative Assessment

4

Till lesson 7 unit 1

1. Choose the correct answer.

a. Which choice shows the numbers in an ascending order ?

- | | |
|-------------------------------|------------------------|
| A. 1. $700 + 50 + 7$ | B. 1. 780 |
| 2. Seven hundred seventy-five | 2. Eight hundred forty |
| 3. 765 | 3. $800 + 50 + 1$ |
| 4. Eight hundred five | 4. One thousand |
| C. 1. 572 | D. 1. Six hundred five |
| 2. $500 + 80 + 1$ | 2. $600 + 50$ |
| 3. Five hundred seventy-two | 3. 674 |
| 4. $600 + 70 + 4$ | 4. Six hundred nine |

b. Which digit makes the number sentence true ? $3 \text{ million}, 521 \text{ thousand}, 432 < 3, \square 21,432$

- | | | | |
|------|------|------|------|
| A. 3 | B. 4 | C. 5 | D. 6 |
|------|------|------|------|

c. Which number sentence is true ?

- | | |
|------------------------------------|---|
| A. $74,562 < 9,000 + 800 + 50 + 6$ | B. $300,000 + 40 < 700,000 + 20$ |
| C. $\text{million} < 792,561$ | D. $\text{Four hundred eighty two} > 7 \text{ thousand}, 914$ |

d. In the number 11,111, how many times is the digit in the Thousands place as the digit in the Tens place ?

- | | | | |
|-------|--------|----------|-----------|
| A. 10 | B. 100 | C. 1,000 | D. 10,000 |
|-------|--------|----------|-----------|

2. Complete.

- a. 5,007 thousands = _____
- b. Six milliard, four hundred two million, twenty-eight in standard form is _____
- c. The value of the digit 4 in the number 3,456,261,852 is _____
- d. _____ is 100 times fifty thousand.

3. a. List the following in an ascending order. Use standard form.

- $5,000,000,000 + 20,000,000 + 5,000 + 10 + 8$
- 525 million, 508
- Five milliard, three million, fifty three
- $5,000,000,000 + 4,000,000 + 6,000 + 9$

b. List the numbers in a descending order. Use the form in which they are given.

- | | |
|--------------|--------------------------------------|
| • 5 millions | • 500 thousands |
| • 770,322 | • 9 millions and 3 hundred thousands |

Cumulative Assessment

5

Till lesson 8 unit 1

1. Draw the number line, record the midpoint, then round each of the following numbers.

- a. 574,698 [to the nearest Ten Thousand] b. 12,983 [to the nearest Hundred]

2. Use place value strategy to round each of the following.

- a. 4,865 $\approx$ _____ [to the nearest 100]
 b. 7,985,462 $\approx$ _____ [to the nearest Hundred Thousand]
 c. 99,999,862 $\approx$ _____ [to the nearest Million]
 d. 54,321,782 $\approx$ _____ [to the nearest Ten Thousand]

3. Choose the correct answer.

- a. 78,562 _____ $9,000 + 800 + 50 + 4$
 A. > B. < C. =
 b. 100,000 is _____ times 1,000
 A. 10 B. 100 C. 1,000 D. 10,000
 c. Which number round to 700,000 when rounded to the nearest Hundred Thousand ?
 A. 706,999 B. 752,384 C. 799,999 D. 789,653
 d. 870 hundreds = _____ tens.
 A. 87 B. 8,700 C. 87,000 D. 870,000
 e. $2,357 \approx 2,000$ rounding to the nearest _____
 A. Ten B. Hundred C. Thousand D. Ten Thousand
 f. What is the smallest number can be rounded to 2,500 when rounded to the nearest Hundred ?
 A. 2,512 B. 2,492 C. 2,457 D. 2,543

4. Write 5 different numbers if rounded to the nearest hundred the result is 784,500

5. Complete.

Composed : 7,453,361,214

Decomposed : _____

Cumulative Assessments on UNIT 2

Cumulative Assessment

6**Till lesson 1 unit 2**

1. Choose the correct answer.

- a. Fady wrote $994 + 0 = 994$ using the _____ property.
A. additive identity B. commutative C. associative
- b. $70,000,000 + 8,000 + 50 + 1$ _____ Seven million, twenty
A. $>$ B. $<$ C. $=$
- c. Which number round to 3,500,000 when rounded to the nearest Hundred Thousand?
A. 3,562,531 B. 3,426,217 C. 3,524,261 D. 3,584,212
- d. The value of the digit 6 in the number 63,785 is 100 times the value of the digit 6 in which number?
A. 46,521 B. 94,682 C. 241,261 D. 432,216

2. Complete.

- a. $35 + 14 = 14 +$ _____
- b. $[134 + 65] + 99 =$ _____ $+ [65 + 99]$
- c. $0 + 9,463 =$ _____
- d. The additive identity is _____
- e. The place value of the digit 5 in the number 3,512,006 is _____

3. Solve each problem and name the property used.

- a. $17 + 8 + 3$ _____
- b. $35 + 14 + 15 + 36$ _____

4. Round 773,329

- a. to the nearest Ten _____
- b. to the nearest Ten Thousand _____

Cumulative Assessment

7

Till lesson 2 unit 2

1. Choose the correct answer.

a. $35,216 + 1,999 =$ _____

A. 37,215

B. 45,206

C. 37,216

D. 36,216

b. Which of these statements used only Commutative Property of addition to find $17 + 48 + 13$?A. $[17 + 48] + 13$ B. $17 + 13 + 48$ C. $17 + [13 + 48]$ D. $[17 + 13] + 48$

c. $58,000 =$ _____ tens

A. 58,000

B. 5,800

C. 580

D. 58

d. $762 + 3,156 =$ _____ $+ 762$

A. 762

B. 3,918

C. 3,156

D. 1,524

2. Estimate using rounding to the nearest 100. Find the exact answer.

$$\begin{array}{r} \text{a.} \quad 35,462 \\ + 23,221 \\ \hline \end{array}$$

$$\begin{array}{r} \text{b.} \quad 2,942 \\ + 350 \\ \hline \end{array}$$

$$\begin{array}{r} \text{c.} \quad 94,641 \\ + 2,961 \\ \hline \end{array}$$

3. Use the properties of addition to find the sum of $142 + 55 + 18 + 45$

4. In a week 3,573 tourists visited Giza Pyramids and in the next week 4,230 tourists visited them. Find the number of tourists in the two weeks. [Round to the nearest Hundred]

5. Arrange in a descending order, using the forms which the numbers are written.

- 3 millions, 50 thousands, 40
- Three million, five hundred thousand, fourteen
- 3,000,786,562
- 3,000,000,000 + 20,000,000 + 400

The order is : _____

Cumulative Assessment

8

Till lesson 3 unit 2

1. Use the standard subtraction algorithm to solve the problem. Then, round each number to the nearest Ten to check the reasonableness of your answer.

$$\begin{array}{r} \text{a. } 7,356 \\ - 2,547 \\ \hline \end{array}$$

$$\begin{array}{r} \text{b. } 3,785 \\ - 2,816 \\ \hline \end{array}$$

$$\begin{array}{r} \text{c. } 35,204 \\ - 4,071 \\ \hline \end{array}$$

2. Find.

$$\text{a. } 754 - 399 = \underline{\hspace{2cm}}$$

$$\text{b. } 9,241 - 5,176 = \underline{\hspace{2cm}}$$

$$\text{c. } 4,000 - 2,436 = \underline{\hspace{2cm}}$$

$$\text{d. } 81,364 - 7,453 = \underline{\hspace{2cm}}$$

$$\text{e. } 2,461 + 3,928 = \underline{\hspace{2cm}}$$

$$\text{f. } 17,658 + 9,874 = \underline{\hspace{2cm}}$$

3. Choose the correct answer.

$$\text{a. } 370 \text{ Hundreds} = 3,700 \underline{\hspace{2cm}}$$

A. Ones

B. Tens

C. Hundreds

D. Thousands

$$\text{b. } 7,856,432 \bigcirc 7,000,000 + 80,000 + 6,000 + 900 + 80 + 9$$

A. <

B. =

C. >

- c. Which one has the answer 12,987?

$$\text{A. } 31,256 - 18,269$$

$$\text{B. } 15,111 - 2,125$$

$$\text{C. } 31,256 + 18,269$$

$$\text{D. } 15,111 + 2,125$$

- d. Find the difference.

$$3,215$$

$$\text{A. } 4,391$$

$$\text{B. } 2,161$$

$$- 1,176$$

$$\text{C. } 2,039$$

$$\text{D. } 4,381$$

- e. Which of the following represents the Commutative Property in addition?

$$\text{A. } 131 + 0 = 131$$

$$\text{B. } 5,670 = 5,000 + 600 + 70$$

$$\text{C. } 13 + [64 + 29] = [13 + 64] + 29$$

$$\text{D. } 120 + 71 = 71 + 120$$

4. A factory produced 2,879 toys in one week. The next week, the factory produced 3,267 toys. Find the difference between the production in the two weeks.

Cumulative Assessment

9

Till lesson 4 unit 2

1. Complete.

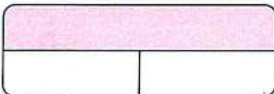
- a. The value of the variable K in the equation $2,103 - K = 1,230$ is _____
- b. $5,467,219 - \underline{\hspace{2cm}} = 2,000,000$
- c. $4,621 + 62,504 = \underline{\hspace{2cm}}$
- d. The place value of the digit 4 in the number 3,641,297 is _____

2. Choose the correct answer.

- a. The value of the digit 3 in the number 7,516,234,981 is _____
 A. 3,000,000,000 B. 300,000 C. 30,000 D. 3,000
- b. $[241 + 1,614] + 7,426 = \underline{\hspace{2cm}} + 7,426$
 A. 241 B. 1,855 C. 7,426 D. 1,000
- c. $[8 \times 1,000,000] + [7 \times 10,000] + [5 \times 100] + [6 \times 10]$ in standard form is _____
 A. 87,560 B. 8,070,560 C. 8,700,560 D. 870,560
- d. If $x - 8 = 13$, then $x = \underline{\hspace{2cm}}$
 A. 5 B. 4 C. 21 D. 22

3. Solving equations with variable. Create a bar model.

a. $s - 74,252 = 23,402$

Bar model: 

Solution: _____

b. $b + 4,261 = 21,253$

Bar model: 

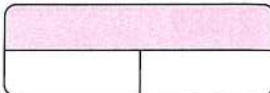
Solution: _____

c. $47,261 - m = 31,422$

Bar model: 

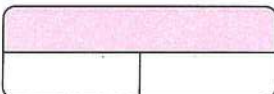
Solution: _____

d. $45,261 + k = 52,428$

Bar model: 

Solution: _____

4. A colony has 32,425 male ants, if the colony has 74,319 ants, how many ants are female?

Bar model: 

Solution: _____

5. Use the properties of addition to find the sum.

- a. $75 + 87 + 25 = \underline{\hspace{2cm}}$
- b. $712 + 59 + 28 + 111 = \underline{\hspace{2cm}}$

Cumulative Assessment

10

Till lesson 5 unit 2

1. Complete the following.

- a. If $b - 34,252 = 12,604$, then $b =$ _____
- b. The value of the digit 4 in the number 4,851,061,052 is _____
- c. 2,785,629,142 in expanded form is _____
- d. $15 + 5 + 7 = [15 + 5] +$ _____ [_____ property] = _____ + _____ = _____
- e. $47,562 - 2,853 =$ _____
- f. In the bar model

100	
35	x

, $x =$ _____

2. Choose the correct answer.

- a. The value of the digit 8 in the number 381,452,671 ☐ The value of the digit 8 in the number 1,815,462
 A. < B. = C. >
- b. The additive identity is _____
 A. 10 B. 1 C. 0 D. 2
- c. $115 + 367 =$ _____ + 115
 A. 115 B. 367 C. 482 D. 252
- d. $5,324 + 16,921 =$ _____
 A. 54,222 B. 22,254 C. 2,245 D. 22,245

3. Estimate using rounding to the nearest 100. Find the exact answer.

a.
$$\begin{array}{r} 5,646 \\ - 2,389 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 72,861 \\ - 5,466 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 2,462 \\ + 1,391 \\ + 946 \\ \hline \end{array}$$

4. Port Said has a population of 782,180, if South Sinai has a population of 111,835 and North Sinai has a population of 450,528, how many more people does Port Said have than South Sinai and North Sinai combined?
- _____
- _____

5. A library sold 5,325 books in the first month, 9,712 books in the second month. If the library had 20,000 books, how many books are left?
- _____
- _____

Cumulative Assessments on UNIT 3

Cumulative Assessment

11

Till lesson 1 unit 3

1. Convert the lengths into the units on the bar models.

a.

783 cm	
— m	— cm

b.

7,486 m	
— km	— m

c.

— m	
25 km	423 m

2. Complete.

a. $7\text{ m} = \text{— mm.}$

b. $\text{— cm} = 78,000\text{ m}$

c. $7\text{ km}, 50\text{ m} = \text{— m}$

d. $8,762\text{ m} = \text{— km}, \text{— m}$

e. $13,000\text{ mm} = \text{— m}$

f. $11\text{ dm} = \text{— cm}$

3. Choose the correct answer.

a. 13 thousands = — hundreds

A. 13,000

B. 1,300

C. 130

D. 13

b. $70,000,000 + 5,000 + 700 + 40 + 3$ in standard form is —

A. 7,050,743

B. 70,005,743

C. 70,050,743

D. 7,005,743

c. If $x + 7 = 20$, then $x = \text{—}$

A. 13

B. 27

C. 30

D. 34

d. $7\text{ dm}, 5\text{ cm} = \text{— cm}$

A. 12

B. 705

C. 75

D. 750

e. $9\text{ km}, 9\text{ m} = \text{— m}$

A. 99

B. 909

C. 9,009

D. 90,009

4. Find the result.

a.
$$\begin{array}{r} 3,562 \\ + 867 \\ \hline \end{array}$$

b.
$$\begin{array}{r} 86,782 \\ - 19,329 \\ \hline \end{array}$$

c.
$$\begin{array}{r} 10,000 \\ - 7,426 \\ \hline \end{array}$$

1. Complete.

- a. 76 cm = _____ dm , _____ cm
- b. 8,875 g = _____ kg , _____ g
- c. The smallest 7-digit number formed from 7 , 0 , 3 , 9 , 8 , 2 , 4 is _____
- d. $37,852 \approx$ _____ [Round to the nearest thousand]
- e. 7 ton , 4 kg = _____ kg
- f. 2 km = _____ mm

2. Choose the correct answer.

- a. kg is a measuring unit of _____
 A. length B. mass C. time D. capacity
- b. 2 kg and 2 g = _____ g
 A. 22 B. 202 C. 2,002 D. 20,002
- c. 700 g 17 kg
 A. < B. = C. >
- d. 7,000 grams = _____ kilograms
 A. 7,000 B. 700 C. 70 D. 7
- e. _____ ton = 5,000 kg
 A. 50 B. 500 C. 5 D. 5,000

3. Convert the masses into the units on the bar models.

a.

8,782 kg	
_____ ton	_____ kg

b.

29,419 g	
_____ kg	_____ g

c.

_____ g	
52 kg	34 g

4. List 21,000 g , 2 ton , 23,000 g , 25 kg from least to greatest

5. A car covers 2 km in one minute , what is the distance the car covers for 8 minutes in kilometers and in meters ?

Cumulative Assessment

13

Till lesson 3 unit 3

1. Find each missing number.

- a. $3,450 \text{ mL} = \text{_____ L}, \text{_____ mL}$
- b. $7,482 \text{ cm} = \text{_____ m}, \text{_____ cm}$
- c. $\text{_____ mL} = 7 \text{ L}, 15 \text{ mL}$
- d. $25,000 \text{ mL} = \text{_____ L}$
- e. $3,729 \text{ g} = \text{_____ kg}, \text{_____ g}$

2. Choose the correct answer.

- a. In which number does the 5 have a value of fifty thousand ?
 A. 3,765,432 B. 7,452,173 C. 8,521,641 D. 5,421,698
- b. Which of the following is the least capacity ?
 A. 7,000 mL B. 15 L C. 2,500 mL D. 4,200 mL
- c. The place value of the digit 6 in the number 3,562,147,209 is _____
 A. Ten Millions B. Millions C. 60,000,000 D. 6,000,000
- d. $7,800 \text{ g} \square 24 \text{ kg}$
 A. $>$ B. $<$ C. $=$
- e. The compose to $[4 \times 100,000] + [2 \times 10,000] + [7 \times 100] + [2 \times 1]$ is _____
 A. 4,272 B. 420,720 C. 420,702 D. 42,702

3. A car was filled with 25 liters , 400 millileters. At the end of the day , there were 10 liters , 230 milliliters left in the tank. How much petrol was used ?
- _____

4. Use properties of addition to find the result and name the property you used.

$$18 + 35 + 82 + 15 \text{ _____}$$

5. Write four numbers that could be rounded to 340,000 when rounded to the nearest ten thousand.
- _____

1. Write the time in two ways.

a.


 :
It's

b.


 :
It's

c.


 :
It's

d.


 :
It's

2. Complete.

- a. $3\text{ L} - 2,456\text{ mL} = \text{_____ mL}$
- b. $11\text{ kg}, 400\text{ g} + 3\text{ kg}, 250\text{ g} = \text{_____ kg}, \text{_____ g}$
- c. $3\text{ minutes}, 20\text{ seconds} = \text{_____ seconds}$
- d. $3\text{ weeks}, 4\text{ days} = \text{_____ days}$
- e. $723\text{ cm} = \text{_____ m} + \text{_____ cm}$
- f. $350\text{ tens} = \text{_____ hundreds}$
- g. $98\text{ cm} = \text{_____ dm}, \text{_____ cm}$

3. Choose the correct answer.

- a. $700\text{ cm} = \text{_____ dm}$
 A. 7 B. 70 C. 700 D. 7,000
- b. The place value of the digit 8 in the number 3,856,421,912 is _____
 A. Hundred Thousands B. Billions
 C. Millions D. Hundred Millions
- c. $3\text{ weeks}, 2\text{ days} = \text{_____ days}$
 A. 5 B. 21 C. 23 D. 30
- d. $5\text{ tons} = \text{_____ kg}$
 A. 5 B. 50 C. 500 D. 5,000
- e. $751 + 21 = 21 + \text{_____}$
 A. 751 B. 21 C. 772 D. 793

Cumulative Assessment

15

Till lesson 6 unit 3

1. Choose the correct answer.

a. 7,000 mm = _____ m

A. 7

B. 70

C. 700

D. 7,000

b. 35,000 tens = _____ hundreds

A. 35

B. 350

C. 3,500

D. 35,000

c. $[7 \times 10,000] + [4 \times 1,000] + [5 \times 100] + [3 \times 10]$ _____ 7,453

A. >

B. <

C. =

d. In the opposite bar model, $x =$ _____

A. 526 kg

B. 526 g

C. 526 m

D. 526 mL

78,526 g	
78 kg	x

e. $3:40 + 30$ minutes = _____

A. 4:10

B. 4:50

C. 3:20

D. 7:40

2. Ahmed bought 5 m , 50 cm of cloth , he made a pair of trousers by 2 m , 25 cm

What is the length of the left cloth with him ?

3. The mass of Mina is 43 kg , 450 g and the mass of Sara is 34 kg , 900 g

What is the total mass of Mina and Sara ?

4. Complete.

a. 16 dm = _____ cm

b. 4 L , 240 mL – 2 L , 420 mL = _____ mL

c. If $x - 342 = 741$, then $x =$ _____

d. 78,000 cm = _____ m

e. 5 days = _____ hours

5. Write the time in two ways.

a.



____ : ____

It's _____

b.



____ : ____

It's _____

1. Choose the correct answer.

- a. 10 kilograms = _____ grams
A. 10 B. 100 C. 1,000 D. 10,000
- b. 8 L, 35 mL = _____ mL
A. 835 B. 8,350 C. 8,035 D. 83,500
- c. The place value of the digit 8 in the number 8,406,261,092 is _____
A. Thousands B. Ten Millions C. Hundred Millions D. Millions
- d. 7 : 25 – 40 minutes = _____
A. 8 : 05 B. 6 : 45 C. 5 : 25 D. 6 : 25
- e. _____ m = 9,700 cm
A. 97 B. 970 C. 9,700 D. 97,000

2. Complete.

- a. 78,456 $\approx$ _____ [to the nearest Ten]
- b. 3 L, 270 mL + 5 L, 980 mL = _____ L , _____ mL
- c. If the total mass of 10 balls having the same mass is 120,000 grams
 , then the mass of each ball is _____ kg
- d. 2 tons , 20 kg = _____ kg

3. A tank with capacity of 70 liters is filled with 25,000 milliliters of water.

How many more liters of water are needed to fill it up completely ? _____

4. Youssef studies 30 minutes every day. How many hours will he study in 6 days ?

5. An ant may walk up to 5 km per day. If the ant continues this for 20 days, how many meters will the ant walk ?

Cumulative Assessments on UNIT 4

Cumulative Assessment

17

Till lesson 1 unit 4

1. Complete.

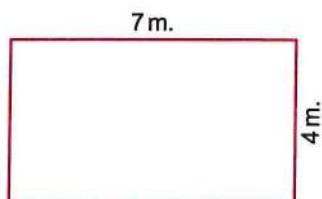
- $3:15 + 2:50 =$ _____
- A rectangle of 12 m length and 8 m width , its perimeter is _____ m
- A square of side length 70 cm , its perimeter = _____ cm
- _____ mL = 5 L , 34 mL
- $39 + 0 =$ _____ [_____ property]
- 35,000 = _____ Hundreds

2. Choose the correct answer.

- A square of side length 10 cm, then its perimeter = _____ cm
A. 10 B. 20 C. 40 D. 100
- The perimeter of the rectangle of 7 cm length and 3 cm width = _____
A. 10 cm B. 10 cm^2 C. 20 cm D. 20 cm^2
- 4 weeks ☐ 30 days
A. < B. = C. >
- $35,714 - 7,642 =$ _____
A. 37,356 B. 73,356 C. 28,072 D. 28,702
- The value of the digit 5 in the number 531,261,049 is _____
A. 500,000,000 B. 5,000,000 C. 50,000,000 D. 500,000

3. Calculate the perimeter of each of the following shapes "Use two different formulas to solve each problem" Show your work.

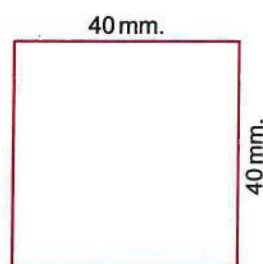
a.



First formula _____

Second formula _____

b.



First formula _____

Second formula _____

- Shady is building a rectangular frame. Its length is 42 millimeters and its width is 28 millimeters. What will the perimeter of the frame be ?

Cumulative Assessment

18

Till lesson 2 unit 4

1. Choose the correct answer.

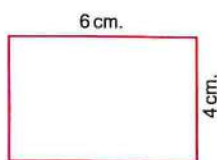
- a. A rectangle its length is 10 m and its width is 7 m , then its area = _____ m^2
 A. 17 B. 34 C. 70 D. 140
- b. A square of side length 7 cm , then its area = _____
 A. 28 cm B. 28 cm^2 C. 49 cm D. 49 cm^2
- c. The perimeter of the square = side length $\times$ _____
 A. itself B. 4 C. width D. length
- d. The place value of the digit 0 in the number 3,250,641,798 is _____
 A. Millions B. Millions C. Hundred Thousands D. Thousands
- e. 3 L , 25 mL = _____ mL
 A. 325 B. 28 C. 3,025 D. 30,025

2. Complete.

- a. $84,582 - 9,431 =$ _____
- b. $5,123 + 16,257 =$ _____
- c. 3 kg , 3 g = _____ g
- d. If $A - 423 = 147$, then $A =$ _____
- e. _____ hundreds = 730 tens
- f. $214 + [361 + 700] = [214 + 361] +$ _____

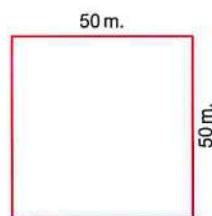
3. Find the area and the perimeter of each of the following figures.

a.



Area = _____
 Perimeter = _____

b.



Area = _____
 Perimeter = _____

c.



Area = _____
 Perimeter = _____

4. Sketch two rectangles, the area of each one is 12 cm^2 . Find the perimeter of each.

a.

P = _____

b.

P = _____

Cumulative Assessment

19

Till lesson 3 unit 4

1. Complete each of the following.

- A square has a perimeter 24 cm, then its area is _____
- A square of area 25 cm^2 , then its side length is _____
- The area of a rectangle is 32 m^2 and its length is 8 m, then its width is _____
- $3 : 25 + 6 : 42 =$ _____
- $37,856 \approx$ _____ [Round to the nearest 1,000]

2. Choose the correct answer.

- Width of a rectangle = _____
A. $\text{Area} \div \text{length}$ B. $\text{Area} \div \text{width}$ C. $\text{Length} \times \text{width}$ D. $\text{Area} \times \text{length}$
- A square whose area is 25 m^2 , then its side length = _____ m
A. 4 B. 5 C. 6 D. 7
- $199 + 5,482$ $9,462 - 3,781$
A. < B. = C. >
- The side length of a square of perimeter 20 cm the side length of a square of area 49 cm^2
A. < B. = C. >
- $3 \text{ L}, 720 \text{ mL} =$ _____ mL
A. 723 B. 750 C. 3,720 D. 3,072

3. Write the time in two ways.

a.


 :

It's _____

b.


 :

It's _____

c.


 :

It's _____

d.


 :

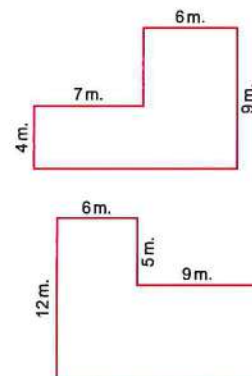
It's _____

4. A rectangle of perimeter 20 cm. and its length is 6 cm. Find its area.

5. A colony of ants eats approximately 2,000 grams of food each day. If the ants have 10 kilograms of food stored, how many days will the food last?

1. Complete.

- The perimeter of the opposite complex figure equals _____ m
- The area of the opposite complex figure equals _____ m^2
- $7,000 \text{ g} = \text{_____ kg}$
- The value of the digit 5 in 5,321,647 is _____
- $75 \text{ dm} = \text{_____ m}, \text{_____ dm}$
- The value of the digit 0 in the number 769,423,018 is _____



2. Choose the correct answer.

- $59,764 < \text{_____}$
 A. 59,000 B. 49,999 C. 59,765 D. 59,763
- Hany wrote $325 + 0 = 325$, using the _____ property.
 A. commutative B. associative C. additive identity D. distributive
- $[3 \times 1,000] + [3 \times 10] = \text{_____}$
 A. 330 B. 3,030 C. 3,300 D. 30,030
- The perimeter of a rectangle with 7 cm long and 3 cm wide equals _____
 A. 21 cm B. 20 m C. 21 cm^2 D. 20 cm

3. Find the result.

a. $2,456 - 1,999$

b. $356 - 149$

4. Jana walked once around the squared playground. She covered a distance of 20 m
 What is the area of this playground? _____

1. Choose the correct answer.

- 42 is _____ times the number 6.
A. 6 B. 7 C. 8 D. 9
- $8 + 8 + 8 + 8 + 8 =$ _____
A. $8 \times 8 = 64$ B. $4 \times 8 = 32$ C. $6 \times 8 = 48$ D. $5 \times 8 = 40$
- $7,000 + 600 + 20 + 1 >$ _____
A. 7,921 B. 8,006 C. 6,997 D. 9,300
- _____ mL = 3 L, 124 mL
A. 3,124 B. 3,024 C. 1,243 D. 1,324
- Milliard is the smallest _____ digit number.
A. 5 B. 8 C. 9 D. 10

2. Complete.

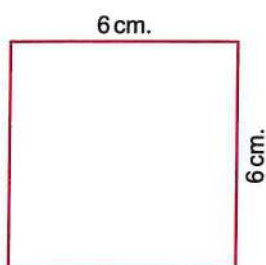
- 24 is _____ times the number 8.
- The multiplicative comparison statement for

9	9	9	9	9	9
---	---	---	---	---	---

 _____ is _____ times the number 9.
- 4 days = _____ hours
- $10 + 10 + 10 + 10 =$ _____ $\times$ _____ = _____
- The additive identity is _____

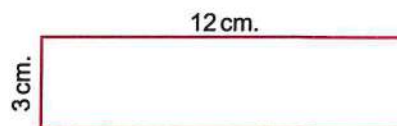
3. Find the area and the perimeter of each of the following figures.

a.



Area = _____
Perimeter = _____

b.



Area = _____
Perimeter = _____

4. Compare, write the method you used.

- 64 and 8 _____
- 36 and 4 _____

1. Write an equation for each comparison statement.

Use a letter to represent the unknown. Solve the equation.

- a. A number is 6 times the number 5

- b. 40 is 5 times a number.

- c. 70 is how many times the number 10 ?

2. Solve.

- a.
- $n = 2 \times 8$
-

- b.
- $7 \times k = 49$
-

- c.
- $b \times 9 = 72$
-

3. Choose the correct answer.

- a.
- $9\text{ m} - 80\text{ cm} =$
- _____ cm

A. 800

B. 820

C. 720

D. 980

- b. If
- $z \times 8 = 32$
- , then
- $z =$
- _____

A. 4

B. 8

C. 2

D. 3

- c.
- $341 + 596 =$
- _____

A. 837

B. 997

C. 937

D. 255

- d. What number is 8 times the number 12 ?

A. 120

B. 80

C. 128

D. 96

4. Complete.

- a. 5 times the number _____ is 20.

- b. 4 times the number 9 is _____

- c. If
- $n \times 3 = 15$
- , then
- $n =$
- _____

- d. The place value of the digit 5 in the number 3,452,162 is _____

- e. 3 tons = _____ kg

Cumulative Assessment

23

Till lessons (4 & 5) unit 5

1. Complete.

a. $30 \times \underline{\hspace{2cm}} = 5 \times 30$

c. $3 \text{ L} + 155 \text{ mL} = \underline{\hspace{2cm}} \text{ mL}$

e. $1 \times 65 = \underline{\hspace{2cm}}$

b. $3 \times 2,000 = \underline{\hspace{2cm}}$

d. $980 \times 0 = \underline{\hspace{2cm}}$

f. $18,000 = \underline{\hspace{2cm}}$ thousands

2. Choose the correct answer.

a. $18 \times 10 = \underline{\hspace{2cm}}$

A. 28

B. 108

C. 1,180

D. 180

b. $80 \times 7 = \underline{\hspace{2cm}}$

A. 560

B. 56

C. 5,600

D. 87

c. $5,000 \text{ m} = \underline{\hspace{2cm}} \text{ km}$

A. 50

B. 500

C. 55

D. 5

d. The perimeter of the rectangle with 8 cm long and 4 cm wide equals $\underline{\hspace{2cm}}$ cm.

A. 24

B. 12

C. 32

D. 16

3. Put ($<$, $>$ or $=$).

a. $7 \text{ kg}, 40 \text{ g}$



$6 \text{ kg}, 550 \text{ g}$

b. 1×258



$1 + 258$

c. 3×200



300×2

d. 8×6



6×8

4. Martin has 36 marbles. Write an equation using the Commutative Property of Multiplication to describe two ways he can arrange them.
- _____

5. Hany bought 4 mobiles, the price of each mobile is 3,000 pounds. How much did Hany pay?
- _____

Cumulative Assessment

24

Till lessons (6 & 7) unit 5

1. Solve each problem.

a. $4 \times [3 \times 3] = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

c. $[4 \times 2] \times 7 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

e. $[5 \times 8] \times 5 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

b. $6 \times [2 \times 5] = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d. $[9 \times 10] \times 3 = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

f. $8 \times [6 \times 10] = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

2. Complete.

a. $270 = \underline{\hspace{2cm}}$ tens

c. $18,000 = \underline{\hspace{2cm}}$ hundreds

e. 5 times the number $\underline{\hspace{2cm}}$ is 40.

b. The time  is $\underline{\hspace{1cm}} : \underline{\hspace{1cm}}$

d. $80 = \underline{\hspace{2cm}} \times 10$

f. $7 + 7 + 7 + 7 + 7 = 7 \times \underline{\hspace{2cm}}$

3. Use decomposing and the Associative Property of Multiplication to solve.

a. $8 \times 300 = \underline{\hspace{2cm}}$

b. $5 \times 7,000 = \underline{\hspace{2cm}}$

4. Ayman has 5 bags, each bag has 8 packs of coloring pencils, if each pack has 6 coloring pencils, how many pencils Ayman has?

$\underline{\hspace{2cm}}$

5. Choose the correct answer.

a. $7,000,000 + 800,000 + 3,000 + 60 = \underline{\hspace{2cm}}$

A. 7,803,060

B. 7,830,600

C. 8,703,006

D. 7,803,006

b. $2 \times 6 \times 100 = \underline{\hspace{2cm}}$

A. 120

B. 1,200

C. 12,000

D. 612

c. $26,473 \approx \underline{\hspace{2cm}}$ [to the nearest Ten]

A. 26,400

B. 26,470

C. 26,000

D. 26,500

d. $3,582 + 5,076 = \underline{\hspace{2cm}}$

A. 8,558

B. 8,568

C. 8,658

D. 8,865

e. The value of the digit 7 in the number 3,576,241,198 is $\underline{\hspace{2cm}}$

A. 70,000

B. 700,000

C. 7,000,000

D. 70,000,000

Cumulative Assessments on UNIT 6

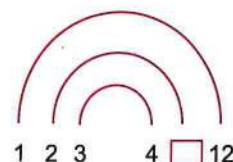
Cumulative Assessment

25

Till lessons (1 & 2) unit 6

1. Choose the correct answer.

- 4 is a factor of _____.
A. 14 B. 12 C. 22 D. 42
- $30 = 5 \times$ _____.
A. 6 B. 5 C. 8 D. 7
- 48 is 6 times the number _____.
A. 6 B. 9 C. 7 D. 8
- _____ is a factor of 27.
A. 4 B. 5 C. 9 D. 10
- The missing factor in the factor rainbow is _____.
A. 6 B. 12
C. 24 D. 36



2. Complete.

- All factors of 6 are _____
- _____ is the only even prime number.
- $76 \times 1,000 =$ _____
- The value of 8 in the number 387,064,100 is _____
- 8 kg , 8 g = _____ g
- 789 mm = _____ cm , _____ mm
- The side length of a square = the perimeter of the square $\div$ _____

3. Write.

- All the factors of 32

- All the factors of 23

- All prime numbers between 20 and 40

- All composite numbers between 50 and 65

1. Write the common factors of each pair of numbers.

a. 12 and 28

b. 30 and 42

c. 19 and 8

2. Complete.

a. G.C.F of 18 and 40 is _____

b. $100 \times 24 =$ _____c. $[5 \times 8] \times 7 =$ _____ $\times$ _____ $=$ _____

d. G.C.F of 10 and 25 is _____

e. $3,275 \approx$ _____ rounding to the nearest Hundred.**3. Choose the correct answer.**

a. The common factor of all numbers is _____

A. 1

B. 0

C. 2

D. 10

b. $38,265 \text{ m} <$ _____

A. 38 km

B. $38 \text{ km} + 100 \text{ m}$

C. 83 km

D. 83 m

c. 3 and 7 are factors of _____

A. 36

B. 18

C. 35

D. 42

d. $7 + 7 + 7 + 7 =$ _____A. 4×7 B. $7 + 4$ C. 7×7 D. $7 + 7$ e. If $3,000 - x = 1,391$, then $x =$ _____

A. 4,391

B. 2,391

C. 1,609

D. 2,609

4. Bassem has 48 pens and 40 pencils, he wants to put them in packs so that each pack has the same number of pens and the same number of pencils. What is the greatest number of packs? What is the number of pens and pencils of each pack?

Cumulative Assessment

27

Till lessons (4 & 5) unit 6

1. Complete.

- a. The common multiple for all numbers is _____
- b. The smallest prime number is _____
- c. $50,000,000 + 341,000 + 143 =$ _____
- d. In the opposite bar model, the value of $b =$ _____
- e. $5 \text{ km} - 3,000 \text{ m} =$ _____ km

b	
3,301	2,001

2. Choose the correct answer.

- a. 38,294,182 rounded to the nearest Hundred Thousand is _____
 A. 38,200,000 B. 30,000,000 C. 38,290,000 D. 38,300,000
- b. _____ is a multiple of 8.
 A. 56 B. 42 C. 36 D. 18
- c. _____ is not a multiple of 6.
 A. 36 B. 0 C. 26 D. 24
- d. 0 is a common multiple of _____
 A. 10 and 8 only. B. all numbers. C. 6 and 9 only. D. 4 and 5 only.

3. List.

- a. All multiples of 3 up to 30

- b. All factors of 36

- c. Two common multiples of 2 and 5

- 4.** Bassem has a swimming practice every five days of July , beginning July 5
 How many times he will go to his practice in July ?

1. Complete.

- a. 15 is a multiple of 5, then _____ is a factor of _____
- b. Write 3 factors of 36 _____, _____, _____
- c. $3 \times 20 = \text{_____} \times 3$
- d. $280,000 = \text{_____}$ thousands
- e. The numbers 1, 3, 9, 27 are all factors of _____

2. Choose the correct answer.

- a. 45 is a multiple of _____
A. 7 B. 9 C. 6 D. 2
- b. 8 is a multiple of _____ and _____
A. 2, 6 B. 4, 12 C. 4, 8 D. 8, 16
- c. If $5 \times a = 35$, then $a = \text{_____}$
A. 7 B. 5 C. 6 D. 8
- d. G.C.F of 36 and 24 is _____
A. 8 B. 12 C. 9 D. 6
- e. A number has only two factors and their sum is 8, then the number is _____
A. 3 B. 5 C. 6 D. 7

3. a. The number is an even number, it is a multiple of 3 and 5 and lies between 20 and 40
What number is it?

- b.** The number is an odd number, it is a multiple of 3 and a factor of 18 and lies between 5 and 15. What number is it?

4. Find the relationship between the numbers in each group. Write at least two sentences describing each relationship.

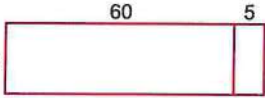
- a. 2, 5 and 10

- b. 4, 6, 12 and 30

1. Complete.

- $4 \times 95 = [4 \times \underline{\hspace{2cm}}] + [4 \times \underline{\hspace{2cm}}]$
- $8 \times 20 = \underline{\hspace{2cm}} \times 8 = \underline{\hspace{2cm}}$
- If $a \times 6 = 48$, then $a = \underline{\hspace{2cm}}$
- $2 \times 1,730 = 2 \times \underline{\hspace{2cm}} + 2 \times \underline{\hspace{2cm}} + 2 \times \underline{\hspace{2cm}}$
- $3,000,000,000 + 4,000,000 + 5,000 + 6 = \underline{\hspace{2cm}}$

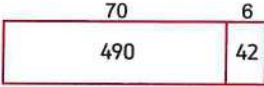
2. Choose the correct answer.

- a. The area model  represents _____

- | | |
|------------------------------------|-----------------------------------|
| A. $[8 \times 60] + [8 \times 50]$ | B. $[8 \times 60] + [8 \times 5]$ |
| C. $[8 \times 6] + [8 \times 5]$ | D. $[8 \times 6] + [8 \times 50]$ |

- b. _____ is a factor of 42.

- | | | | |
|------|-------|------|------|
| A. 7 | B. 12 | C. 8 | D. 9 |
|------|-------|------|------|

- c. The area model  equals _____

- | | | | |
|--------|--------|--------|--------|
| A. 532 | B. 523 | C. 530 | D. 352 |
|--------|--------|--------|--------|

- d. $28,325 - 19,742 = \underline{\hspace{2cm}}$

- | | | | |
|----------|----------|----------|----------|
| A. 8,580 | B. 5,883 | C. 8,853 | D. 8,583 |
|----------|----------|----------|----------|

- e. $3 \text{ km}, 3 \text{ m} = \underline{\hspace{2cm}}$

- | | | | |
|-------|-----------|----------|-----------|
| A. 33 | B. 30,003 | C. 3,003 | D. 33,000 |
|-------|-----------|----------|-----------|

3. Solve.

- $5 \times 73 = \underline{\hspace{2cm}}$
- $61 \times 9 = \underline{\hspace{2cm}}$

4. Mohamed bought 7 packs of candies, each pack holds 45 candies. How many candies with Mohamed?
- _____

Cumulative Assessment

30

Till lessons (3 & 4) unit 7

1. Choose the correct answer.

- a. 5 tons = _____ kg
 A. 5 B. 50 C. 500 D. 5,000
- b. Which product is not correct ?
 A. $36 \times 5 = 180$ B. $52 \times 4 = 280$ C. $28 \times 3 = 84$ D. $47 \times 2 = 94$
- c. The value of the digit 4 in the number 3,461,298 is _____
 A. 4,000 B. 4 million C. 400,000 D. 40,000
- d. The area of the rectangle = _____
 A. $L + W$ B. $2 \times L + 2 \times W$ C. $[L \times W] \times 2$ D. $L \times W$
- e. If $a - 136 = 204$, then $a =$ _____
 A. 340 B. 304 C. 430 D. 403

2. Complete.

- a. The value of the digit 5 in the number 354,621 is _____
- b. The perimeter of the square whose side length is 9 cm is _____ cm
- c. G.C.F of 28 and 42 is _____
- d. $7 \times 1,280 =$ _____
- e. 7 kg = _____ grams
- f. $6 \text{ m} - 50 \text{ cm} =$ _____ cm

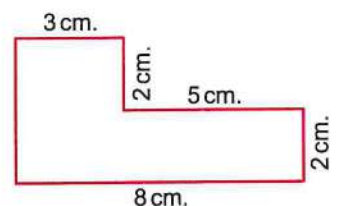
3. Solve using partial products algorithm.

a. 9×78

b. 642×4

4. Find the perimeter and the area of the opposite figure.

- a. The perimeter = _____ cm
- b. The area = _____ cm^2



5. If the mass of a box is 131 kg, then find the mass of 7 boxes with the same mass.

Cumulative Assessment

31

Till lesson 5 unit 7

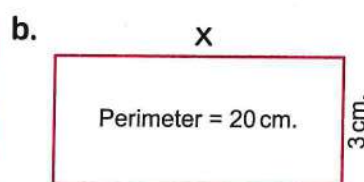
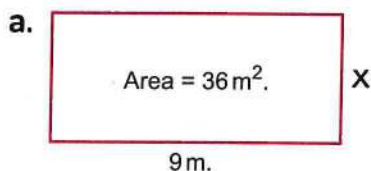
1. Choose the correct answer.

- a. $13 \times 20 =$ _____
 A. 26 B. 260 C. 2,600 D. 26,000
- b. $60 \times 70 =$ _____
 A. 420 B. 4,200 C. 42,000 D. 2,400
- c. 30 is a common multiple of _____
 A. 5 and 4 B. 6 and 9 C. 3 and 8 D. 5 and 3
- d. $51 \times 80 =$ _____
 A. 4,080 B. 8,040 C. 4,800 D. 1,808
- e. $[34 \times 7] \times 19 = 34 \times [\text{_____} \times 19]$
 A. 34 B. 7 C. 19 D. 238

2. Complete.

- a. $20 \times 66 =$ _____
- b. If $6,426 + k = 10,384$, then $k =$ _____
- c. $3 \times 32 = 32 \times 3$ the property used is _____
- d. $24 \times 4 =$ _____
- e. A day and 10 hours = _____ hours
- f. $2,500 =$ _____ tens

3. Find the unknown side length based on the givens of each rectangle.



4. a. Dina bought 25 kg of mango and the price of 1 kg is 30 pounds. How much did Dina pay ?

b. Write three numbers that round to 38,000

1. Complete.

- a. $30 \div 6 =$ _____
- b. The place value of 0 in 70,263,458 is _____
- c. The remainder from $78 \div 8$ is _____
- d. All factors of 23 are _____
- e. $38 \div 6 =$ _____ R 2
- f. 7,000 kg = _____ tons

2. Choose the correct answer.

- a. $18 \div 5 =$ _____
 A. 3 R 0 B. 5 R 3 C. 3 R 3 D. 5 R 0
- b. Three milliard in the standard form is _____
 A. 3,000,000 B. 300,000 C. 3,000,000,000 D. 300,000,000
- c. $30 \div$ _____ $= 7 \text{ R } 2$
 A. 6 B. 5 C. 4 D. 7
- d. 12 is a factor of _____
 A. 24 B. 16 C. 28 D. 32
- e. $97 \div 10 =$ _____
 A. 7 R 9 B. 9 R 5 C. 9 R 7 D. 7 R 5
- f. $[45 \times 20] + [45 \times \text{_____}] = 45 \times 28$
 A. 80 B. 28 C. 8 D. 82

3. Find the quotient and the remainder.

- | | |
|--------------------------------|--------------------------------|
| a. $29 \div 5 =$ _____ R _____ | b. $62 \div 8 =$ _____ R _____ |
| c. $58 \div 6 =$ _____ R _____ | d. $82 \div 9 =$ _____ R _____ |
| e. $45 \div 7 =$ _____ R _____ | f. $36 \div 4 =$ _____ R _____ |

4. Hany has 64 pounds , he wants to give the money to his three sons , how can he share the money equally ? What is the remainder ?

Cumulative Assessment

33

Till lesson 7 unit 7

1. Complete.

a. $800 \div 4 =$ _____

c. $42,000 \div 7 =$ _____

e. $28 \times 4 =$ _____

g. $1,500 \div 3 =$ _____

b. $9,000 \div 9 =$ _____

d. $86 \div 7 =$ _____ R _____

f. G.C.F of 22 and 33 is _____

h. 7 L and 280 mL = _____ mL

2. Choose the correct answer.

a. $480 \div$ _____ = 80

A. 6

B. 60

C. 7

D. 8

b. $30,000 \div 5 =$ _____

A. 600

B. 60

C. 6

D. 6,000

c. A rectangle of length 18 cm and width 9 cm, then its area equals _____

A. 162 cm

B. 162 cm^2 C. 126 cm^2

D. 126 cm

d. _____ hundreds $\div$ 4 tens = 5 tens

A. 200

B. 20

C. 2

D. 2,000

e. $86 \times 8 =$ _____

A. 688

B. 886

C. 868

D. 588

f. _____ is a common multiple for 8 and 6

A. 28

B. 36

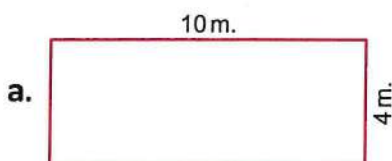
C. 24

D. 42

3. There are 320 tourists wanted to be seated in 8 buses. How many tourists are in each bus ?

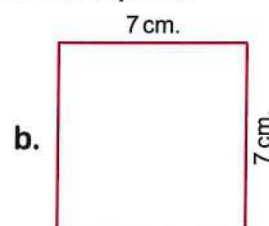
4. A rectangular flowerbed in the city park has an area 15 square meters. The width of the flowerbed is 3 meters. What is the length of the flowerbed ?

5. Find the area and perimeter of the rectangle and the square.



Area = _____

Perimeter = _____



Area = _____

Perimeter = _____

1. Choose the correct answer.

- a. $95 \div 6 =$ _____
A. 15 R 5 B. 15 R 0 C. 5 R 0 D. 16 R 0
- b. $251 + 123 = 123 + 251$ is the _____ property.
A. additive identity B. commutative
C. associative D. distributive
- c. 48 is not a multiple of _____
A. 6 B. 8 C. 4 D. 9
- d. $147 \div 7 =$ _____
A. 22 B. 21 C. 24 D. 17
- e. 7 is a factor of _____
A. 36 B. 42 C. 22 D. 27

2. Complete.

- a. 2,300,030,003 in word form is _____
- b. The additive identity is _____
- c. 7,000 mL = _____ liters
- d. The multiplicative equation of $7 + 7 + 7 + 7 + 7 = 35$ is _____
- e. The smallest odd prime number is _____

3. Use the area model to solve each of the following.

a. $84 \div 3$

b. $216 \div 6$

4. Solve.

- a. $52 \div 2 =$ _____
- b. $38 \times 5 =$ _____
- c. $3,529 - 2,284 =$ _____
- d. $393 \div 3 =$ _____

Cumulative Assessment

35

Till lessons (9 & 10) unit 7

1. Complete.

- a. _____ $\div 3 = 54$
 b. $1,342 \div 8 =$ _____ R _____
 c. $9,880 \text{ cm} =$ _____ m, _____ cm
 d. _____ is a common multiple of all numbers.
 e. The area of the rectangle with 3 cm wide and 7 cm long = _____ cm^2

2. Choose the correct answer.

- a. The number _____ is a multiple of the number 3
 A. 8 B. 16 C. 18 D. 25
 b. $121 \times 4 =$ _____
 A. 125 B. 484 C. 124 D. 424
 c. $3,752,000$ _____ three milliard, seven hundred fifty two
 A. < B. = C. >
 d. If $3,645 + X = 5,789$, then the value of X is _____
 A. 2,144 B. 3,144 C. 8,434 D. 9,434
 e. $7 \text{ m} - 7 \text{ cm} =$ _____ cm
 A. 0 B. 630 C. 603 D. 693

3. Divide using partial quotients algorithm.

a. $89 \div 3$

b. $628 \div 4$

c. $2,374 \div 6$

4. Divide using standard division algorithm.

a. $835 \div 5$

b. $4,258 \div 7$

c. $6,660 \div 9$

1. Choose the correct answer.

- a. If $73 \times 8 = 584$, then $584 \div 8 =$ _____
 A. 78 B. 73 C. 83 D. 87
- b. In the problem $3,467 \div 5$, the quotient is between _____ and _____
 A. 400, 500 B. 300, 400 C. 600, 800 D. 1,000, 2,000
- c. 54 is 6 times the number _____
 A. 9 B. 8 C. 7 D. 6
- d. $4,120 \div 4 =$ _____
 A. 1,300 B. 1,003 C. 1,030 D. 103
- e. $3,264 \div 3 =$ _____
 A. 1,622 B. 1,880 C. 1,088 D. 1,808

2. Complete.

- a. The division problem for $281 \times 6 = 1,686$ is _____
- b. $922 \div 3 =$ _____ R _____
- c. $23 \times 4 =$ _____
- d. $7 \times 362 = 7 \times$ _____ $+ 7 \times$ _____ $+ 7 \times$ _____
- e. If $641 \times 7 = 4,487$, then $4,487 \div 7 =$ _____
- f. The value of the digit 3 in 1,372,006,541 is _____

3. Amal has 358 L.E. She divided the money between her 2 children. What is the share of each one ?

4. Write the division problem that matches the multiplication problem.

a. $421 \times 6 = 2,526$

$\square \div \square = \square$

b. $382 \times 2 = 764$

$\square \div \square = \square$

c. $652 \times 8 = 5,216$

$\square \div \square = \square$

d. $578 \times 4 = 2,312$

$\square \div \square = \square$

Cumulative Assessments on UNIT 8

Cumulative Assessment

37

Till lessons (1 & 2) unit 8

1. Find the value of each of the following.

a. $6 + 3 \times 4 - 5 =$ _____

c. $29 \times 5 =$ _____

e. $15,372 + 203,981 =$ _____

b. $8 + [12 - 5] \times 3 =$ _____

d. $3,602 \div 4 =$ _____

f. $4 \times 6 \div 8 + 7 =$ _____

2. Complete.

a. $36 - [4 + 2] \times 5 =$ _____

c. $3 + 15 \div 3 + 5 =$ _____

e. $[5 \times 1,000,000] + [8 \times 1,000] + [4 \times 10] =$ _____

f. $4,369 \approx$ _____ [to the nearest 100]

b. 4 days = _____ hours

d. $28 \times 70 =$ _____

3. Choose the correct answer.

a. $30 \div 6 + 9 - 4 =$ _____

A. 15

B. 12

C. 10

D. 9

b. 320 hundreds = _____ thousands

A. 32

B. 320

C. 3,200

D. 32,000

c. $51 + 17 + 69 + 63 =$ _____

A. 180

B. 200

C. 190

D. 220

d. $3 \times 9 - [10 - 3] \times 2 =$ _____

A. 27

B. 30

C. 15

D. 13

e. $30 \div 6 + 4 - 2 \times 3 =$ _____

A. 3

B. 6

C. 9

D. 40

f. If $18 - x = 6$, then $x =$ _____

A. 4

B. 12

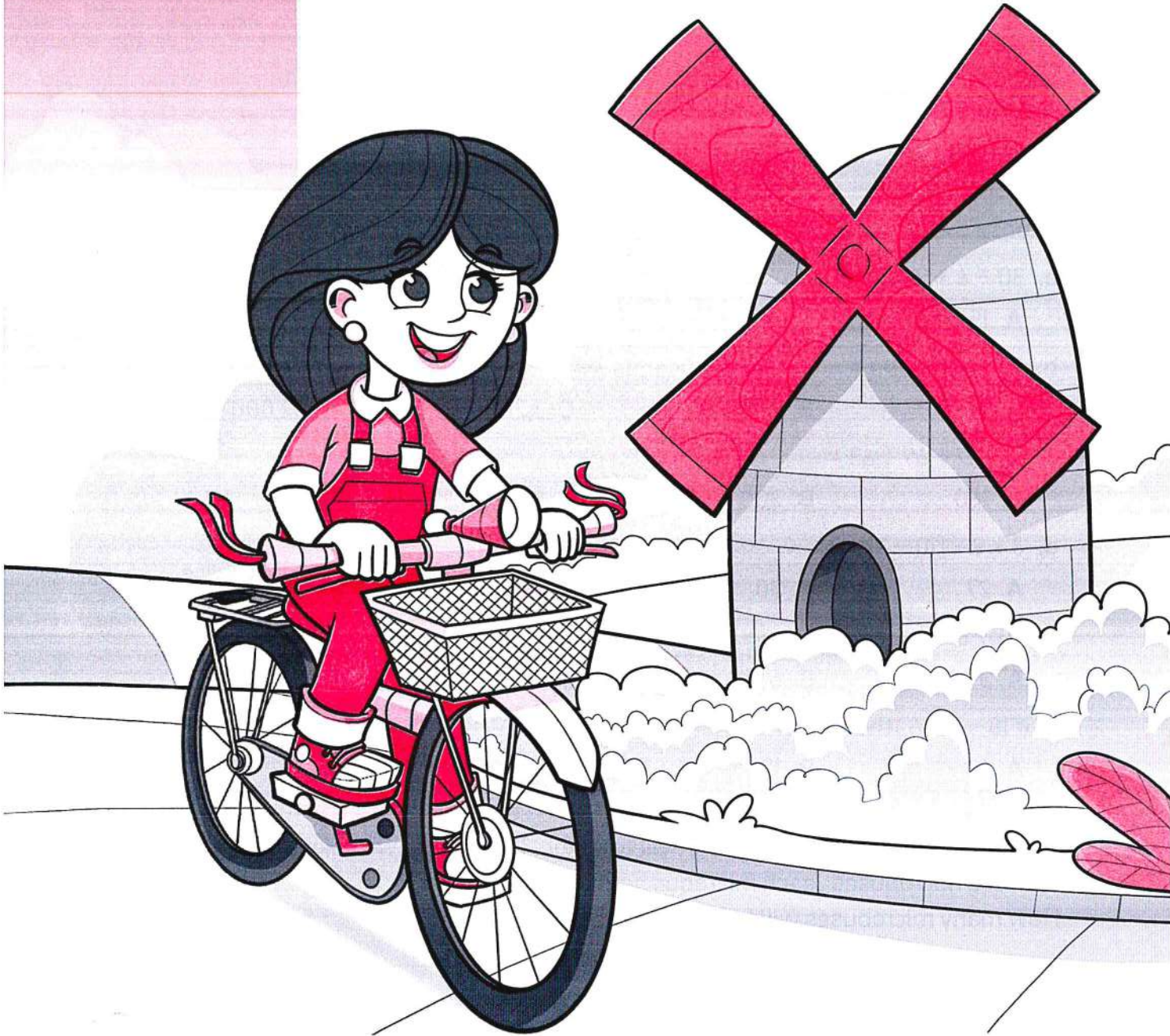
C. 3

D. 2

4. A group of 330 tourists wants to travel to Luxor, 154 tourists will take the train, the rest will take minibuses, each minibus holds 8 seats.
How many minibuses will be needed?

Monthly Tests

Month	Lessons
October	From lesson [1] – Unit [1] to the end of lesson [7] – Unit [3]
November	From lesson [1] – Unit [4] to the end of lesson [6] – Unit [6]



October Test

1



(5 marks)

1. Choose the correct answer.

1. The place value of the underlined digit in the number 5,613,729,114 is _____

- A. Ones. B. Thousands. C. Millions. D. Millions.

2. 2 days and 2 hours = _____ hours

- A. 22 B. 4 C. 62 D. 50

3. 721 cm = _____

- A. 21 m , 7 cm B. 72 m , 1 cm C. 7 m , 21 cm D. 1 m , 72 cm

4. If Abeer studied from 4:10 P.M. to 5:00 P.M., then she studied _____ minutes.

- A. 60 B. 110 C. 40 D. 50

5. 12 L , 50 mL = _____ mL

- A. 62 B. 5,012 C. 1,250 D. 12,050

2. Complete the following.

(5 marks)

1. The value of the digit 6 in the number 364,217,098 is _____

2. $234 + [621 + 479] = [234 + \text{_____}] + 479$ 3. $300 + 7,000 + 10 + 4 + 7,000,000 = \text{_____}$ 4. If $x - 9 = 26$, then $x = \text{_____}$ 5. $735,462 \approx \text{_____}$ [rounding to the nearest Ten Thousand]

3. a. The population of Matrouh Governorate is 519,800 people , and the population of South Sinai Governorate is 112,200 people. Then what is the difference between the population of Matrouh Governorate and the population of South Sinai Governorate ?

(2 marks)

- b. By using the properties of addition , find the sum of :

$$12 + 30 + 28 + 20$$

(3 marks)

October Test 2

Total mark
15
(5 marks)

1. Complete the following.

1. 45 kg , 68 g = _____ g
2. Three milliard , one hundred thirty-seven million , six hundred nineteen thousand , eighty-eight = _____ [in standard form]
3. Rounding the number 8,532 to the nearest 1,000 is _____
4. The place value of the digit 4 in the number 547,621,398 is _____
5. 9 L – 3,000 mL = _____ mL

2. Choose the correct answer.

(5 marks)

1. Milliard is the smallest number formed from _____ digits.

A. 6	B. 9
C. 10	D. 12
2. The liter [L] is the basic unit of _____.

A. length.	B. mass.
C. time.	D. capacity.
3. The additive identity element is _____.

A. zero.	B. 1
C. 10	D. 100
4. $[5 \times 1] + [8 \times 1,000] + [4 \times 10,000] =$ _____.

A. 485	B. 4,805
C. 48,005	D. 480,005
5. If $35 + X = 47$, then the value of X is _____.

A. 7	B. 12
C. 82	D. 72

3. a. Sandy purchased 3 kg , 400 g of sugar and 5 kg , 217 g of rice. What is the total mass which Sandy carried ?

(3 marks)

- b. The game started at 7 : 50 P.M. It ended at 10 : 05 P.M.
How long was the game ?

(2 marks)

October Test 3



(5 marks)

1. Choose the correct answer.

1. If ants walk about 3,000 meters each day, then the ants walk _____ km in 5 days.

- A. 3 B. 150 C. 15,000 D. 15

2. $3,425 + 4,768 = 193 +$ _____

- A. 8 B. 80
C. 800 D. 8,000

3. Which of the following is the greatest mass ?

- A. 900 g B. 20,000 g
C. 70 kg D. 16 kg

4. Rounding the number 34,089 to the nearest Ten Thousand is _____

- A. 34,000 B. 34,090
C. 30,000 D. 35,000

5. 35 million , 17 thousand , 230 = _____

- A. 3,517,230 B. 35,170,230
C. 35,017,230 D. 3,517,023

2. Complete the following.

(5 marks)

1. If $835 - A = 751$, then the value of A = _____

2. $8\text{ L} , 200\text{ mL} - 2\text{ L} , 50\text{ mL} =$ _____ mL

3. The place value of the digit 2 in the number 9,152,747,180 is _____

4. $50,000,000 + 345,000 + 730 =$ _____

5. 8,000 thousands = _____ millions.

3. a. Write the numbers in a descending order.

(3 marks)

4,237,651 , 4,273,653 , 495,627 , 4,237,690

The order is : _____ , _____ , _____ , _____

b. Hany and Sameh participated in a project. Hany paid 251,650 pounds.

If the cost of the project is 500,000 pounds , how much did Sameh pay ?

(2 marks)

November Test

1

Total mark
15

(5 marks)

1. Choose the correct answer.

1. Which of the following is a multiple of 5 ?

- A. 12 B. 56 C. 45 D. 89

2. The missing factor in the box equals _____

- A. 6,000 B. 600
C. 60 D. 6

3. 45 is _____ times the number 9.

- A. 40 B. 5 C. 6 D. 9

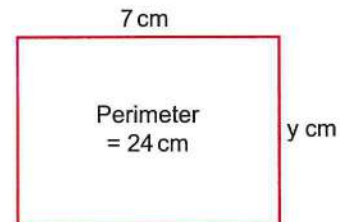
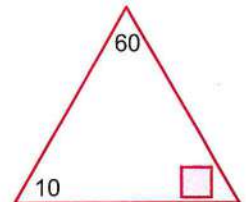
4. If the side length of a square is $[s]$, then its perimeter = _____

- A. $s + s$ B. $s \times s$ C. $s \times 4$ D. $s + s + s$

5. In the opposite figure :

The value of y is _____

- A. 4 B. 5
C. 6 D. 7



2. Complete the following.

(5 marks)

1. The multiplication equation representing : $8 + 8 + 8 + 8 + 8 = 40$ is _____

2. $2 \times [3 \times 4] = [2 \times \text{_____}] \times 4$

3. If $A \times 7 = 35$, then $A = \text{_____}$

4. _____ is the only even prime number.

5. 10 is _____ times the number 2.

3. a. The number is an even number. It is a multiple of 3 , 4 and 6. What number is it ? (2 marks)

b. Find the G.C.F of 40 and 50.

(3 marks)

November Test 2



(5 marks)

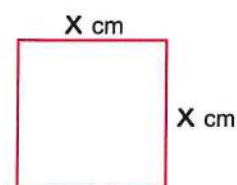
1. Choose the correct answer.

- The common factor of all numbers is _____.
A. 0 B. 1 C. 2 D. 3
- If $a \times 33 = 33 \times 7$, then $a =$ _____.
A. 33 B. 40 C. 7 D. 31
- The length of a rectangle = _____.
A. Area $\div$ length. B. Area $\div$ width.
C. Length $\times$ width. D. Area $\times$ width.
- Which of the following is NOT a multiple of 9?
A. 19 B. 27 C. 18 D. 36
- Which of the following is NOT a prime number?
A. 2 B. 7 C. 9 D. 11

2. Complete the following.

(5 marks)

- If the area of the opposite figure equals 25 cm^2 , then the value of x is _____
- $160 = \text{_____} \times 10$
- All the factors of 10 are _____
- $500 \times 3 = \text{_____}$
- The perimeter of the rectangle = _____ + _____



- a. Amal is putting a border around the edge of a square cake. One side of the cake is 30 cm long. How long will the border of Amal's cake be? (2 marks)

- b. List the common factors and the greatest common factor [G.C.F] of 18 and 6 (3 marks)

Factors of 18 : _____

Factors of 6 : _____

Common factors : _____

G.C.F : _____

November Test 3

Total mark
15

(5 marks)

1. Choose the correct answer.

1. All the following numbers are composite except _____
 A. 66 B. 67 C. 68 D. 69
2. What number is 10 times the number 17 ?
 A. 27 B. 1,700 C. 7 D. 170
3. If the length of a rectangle is [b] , the width is [c] , then what is its area ?
 A. $b + c$ B. $b \times c$
 C. $[2 \times b] + [2 \times c]$ D. $[2 \times b] \times [2 \times c]$
4. _____ is one of the common multiples of 2 and 3.
 A. 4 B. 9 C. 10 D. 6
5. $[200 \times 3] \times 0 =$ _____
 A. 600 B. 6,000 C. zero D. 203

2. Complete the following.

(5 marks)

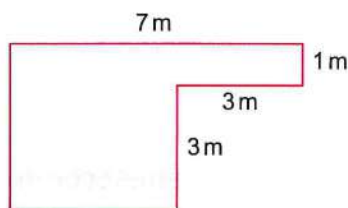
1. If $a \times 7 = 7 \times 8$, then $a =$ _____
2. $19,000 =$ _____ $\times 19$
3. _____ is 5 times the number 3
4. 18 has _____ factors.
5. The perimeter of a square of side length 10 m is _____ m

3. a. Apply the properties of multiplication to find : $2 \times 3 \times 5$

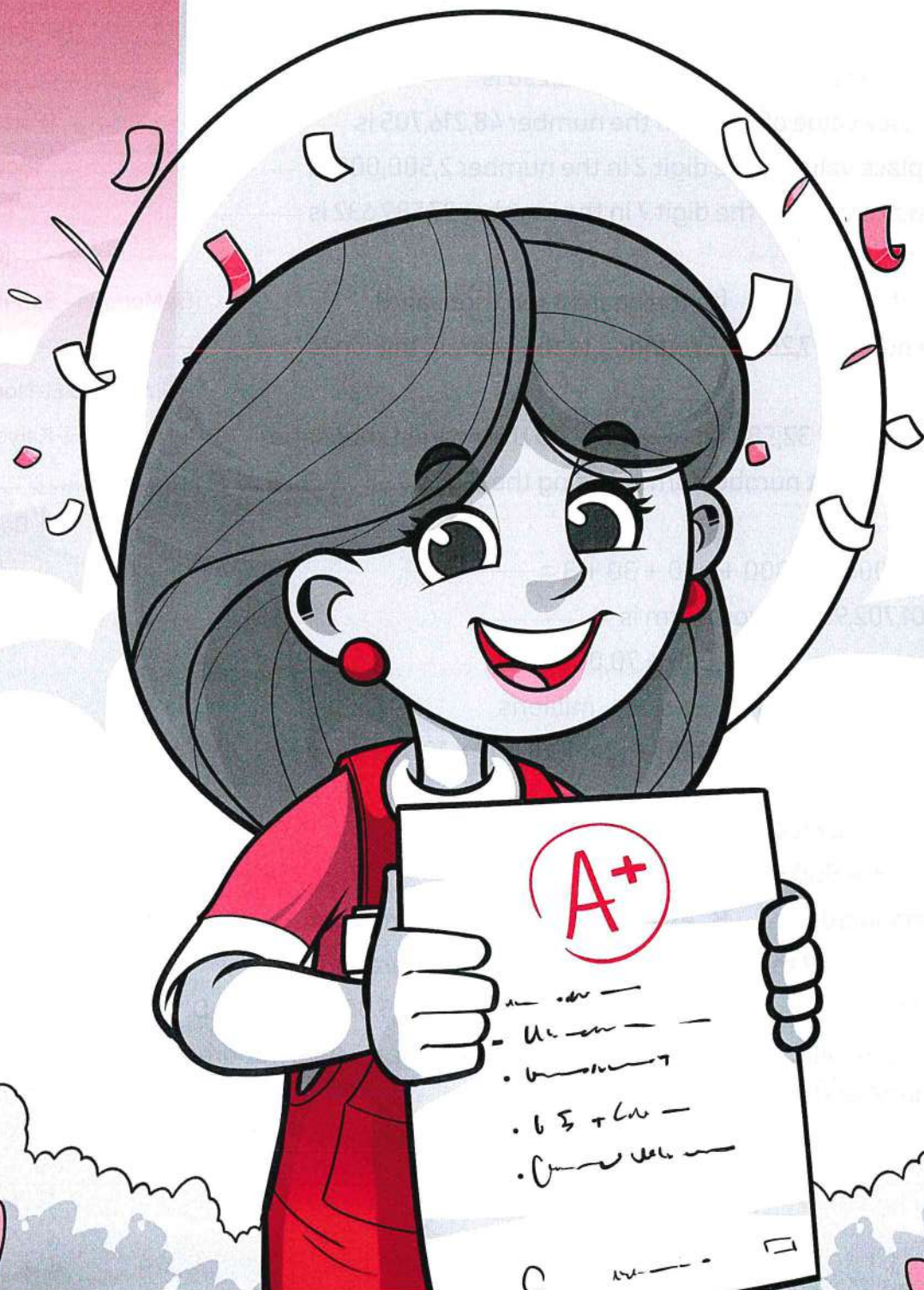
(2 marks)

b. Calculate the area and the perimeter of the following complex shape.

(3 marks)



General Revision



General Revision

On Unit 1

1. Complete.

1. The number 163,518,943 to the nearest million is _____ [Cairo – Heliopolis 22]
2. The standard form of the number three million , two hundred fourteen thousand , nine hundred thirty-six is _____ [Giza - Dokki - 6th October 22]
3. The standard form of the number four hundred and nine is _____ [El-Monofia – Quesna 22]
4. The value of the digit 6 in 61,230,478 is _____ [El-Gharbia - Samanoud 22] [Ismailia 22]
5. The value of the digit 6 in the number 61,230,478 is _____ [El-Beheira 24]
6. The value of the digit 8 in 2,458,462,230 is _____ [Giza 24]
7. The place value of digit 8 in the number 48,216,705 is _____ [Port Said 24]
8. The place value of the digit 2 in the number 2,500,000 is _____ [Souhag 23]
9. The place value of the digit 7 in the number 37,589,632 is _____ [Qena 24]
10. 40 tens = _____ [Cairo 23]
11. $34,279 \approx$ _____ [to the nearest ten thousand] [El-Monofia - Sadat City 23]
12. The number 7,257,365 rounded to the nearest million is _____ [Giza - Abo El-Nomros 23]
13. The number 32,586 $\approx$ _____ [to the nearest thousand] [El-Kalyoubia 23]
14. The smallest number formed using the digits 0 , 8 , 3 , 9 , 5 , 6 , 1 is _____ [El-Beheira 23]
15. $3,000,000 + 8,000 + 400 + 30 + 3 =$ _____ [Alex. 23]
16. 3,501,702,903 in word form is _____
17. _____ = $70,000,000 + 70,000 + 70$
18. 8,000 thousands = _____ millions
19. $[5 \times 100,000] + [3 \times 1,000] + [2 \times 100] + [7 \times 10] =$ _____

2. Choose the correct answer.

1. $90,000 + 4,000 + 300$ written by _____ [El-Monofia 24]
A. standard B. expanded C. word form D. otherwise
2. The number 9 million , 12 thousand , 5 [in standard form] = _____ [Port Said 24]
A. 9,125 B. 9,012,005 C. 9,125,000 D. 9,000,125
3. Nineteen million eight hundred sixty-nine thousand five hundred twenty one [in numbers] = _____ [Giza – October garden 24]
A. 9,546,521 B. 90,965,851 C. 19,869,521 D. 19,521,869

4. $9,000,000 + 6,000 + 50 + 6 =$ _____ [Port Said 24]
 A. 9,656 B. 960,666 C. 9,006,056 D. 6,569
5. The number 1 milliard , 235 million and 127 in standard form = _____ [El-Menia - Samalot 22]
 A. 1,235,000,127 B. 1,235,127 C. 1,272,351 D. 1,235,127,000
6. The expanded form of the number 7,215,603 is _____ [El-Fayoum 22]
 A. $3 + 60 + 5,000 + 10,000 + 200,000 + 7,000,000$
 B. $3 + 60 + 500 + 1,000 + 20,000 + 700,000$
 C. $3 + 600 + 5,000 + 10,000 + 200,000 + 7,000,000$
 D. $3 + 600 + 5,000 + 1,000 + 200,000 + 7,000,000$
7. What is the standard form of eighteen million , six hundred five thousand ? [El-Gharbia - Samanoud 22]
 A. 18,605,000 B. 81,605,000 C. 1,860,500 D. 18,650,000
8. The standard form of the number 2 million , 3 thousand , 45 is _____ [Cairo 23]
 A. 2,003,045 B. 2,345 C. 2,300,045 D. 2,000,300,045
9. Million is the smallest number formed from _____ digits. [El-Monofia - Berket El-Saba 24]
 A. 6 B. 7 C. 9 D. 10
10. Ten million in the smallest number formed from _____ digits. [Ismailia 24]
 A. 6 B. 7 C. 8 D. 9
11. The milliard is the smallest number formed from _____ digits. [Cairo 23]
 A. 6 B. 7 C. 10 D. 9
12. $756,324 \approx$ _____ [to nearest Ten Thousand] [Giza - October Gardens 24]
 A. 756,000 B. 760,000 C. 756,324 D. 700,000
13. $15,367,544 \approx$ _____ [rounding to nearest Million] [Alex. - Agamy 24]
 A. 1,500,000 B. 10,000,000 C. 16,000,000 D. 15,000,000
14. Round 6,749,001,551 to the nearest milliard = _____ [El-Menia - Samalot 22]
 A. 6,000,000,000 B. 7,000,000,000 C. 6,700,000,000 D. 8,000,000,000
15. Which answer represents rounding 32,582,346 to the nearest million ? [Beni Suef 22]
 A. 30,000,000 B. 32,600,000 C. 32,000,000 D. 33,000,000
16. When approximating the number 3,629 to the nearest hundred , it will be _____ [Souhag 23]
 A. 3,600 B. 3,700 C. 3,000 D. 3,620
17. Which digit can be placed in the square to make the mathematical expression correct ?
 $6,201,351 > 6,20 \square , 351$ [Ismailia 22]
 A. 0 B. 1 C. 2 D. 3

18. Which of the following statements is correct ? [Cairo - Heliopolis 23]
 A. $4646 < 4664$ B. $4646 > 4664$ C. $4664 > 4664$ D. $4646 = 4664$
19. Which of the following is a correct ascending order ? [Cairo - Heliopolis 23]
 A. 757 , 573 , 508 , 735 B. 573 , 757 , 735 , 580
 C. 573 , 580 , 735 , 757 D. 580 , 573 , 757 , 735
20. The place value of the digit 8 in the number 3,846,321 is _____ [Cairo - Rod El-Farag 23]
 A. Millions B. Hundred Thousands
 C. Thousands D. Ten Thousands
21. The population of a country is 56,724,033 , then the place value of the digit 6 is _____ [Giza - Dokki 22]
 A. Thousands B. Hundred Thousands
 C. Millions D. Ten Millions
22. The value of the digit 5 in the number 8,135,712 is _____ [Cairo - Rod El-Farag 23]
 A. 50 B. 500 C. 5,000 D. 50,000
23. A bee hive contains 102,635 bees , the number of bees to the nearest ten thousands is _____ [El-Monofia - Sers El-Layyan 23]
 A. 100,000 B. 10,000 C. 102,010 D. 12,090

3. Answer each of the following.

1. List the following numbers in a descending order. [Port Said 22]
 900 thousands , 9 millions , 5 millions and 7 hundred thousands , 500,223
2. Create a number in the millions that is greater than 178,462,490. [Cairo - Heliopolis 22]
3. List the following in an ascending order : [El-Beheira 22]
 8,092,561 , 9,208,111 , 7,534,786 , 8,650,336
4. Arrange the following numbers in an ascending order : [El-Monofia - Sadat City 22]
 1,282,756 , 3,012,427 , 988,423 , 3,105,338
5. Write the number 2,445,232,197 in expanded form.
6. Round 556,536
 a. to the nearest Hundred _____
 b. to the nearest Hundred Thousand _____
7. Decompose the following number using expanded form.
 3 million , 166 thousand , 252
8. In the number 3,712,549 , what digit is in the
 a. Hundreds place ? b. Ten Thousands place ?
 c. Millions place ?

General Revision

On Unit 2

1. Complete.

1. If $3,000 - B = 2,000$, then the value of $B =$ _____

[Cairo - Heliopolis 22]

2. _____ is the additive identity.

[El-Sharkia 22]

3. In the opposite bar model :

The value of $n =$ _____

14,000	
n	7,000

[Port Said 24]

4. Use the opposite bar model to solve the equation :

$$m - 350 = 650$$

The solution : _____

m	
650	350

[Giza 24]

5. In the opposite bar model :

The value of $b =$ _____

750	
230	b

[Luxor 24]

6. The value of the symbol H in the equation $H - 1,590 = 3,410$ is _____

[El-Gharbia - Samanoud 22]

7. In the opposite bar model :

The value of the unknown $k =$ _____

k	
2,515	4,370

[El-Dakahlia 22]

8. $284,615 - 196,392 =$ _____

[Port Said 22]

9. In the opposite bar model :

The value of the unknown $C =$ _____

7,620	
C	4,310

[Damietta 22]

10. If $853 - A = 751$, then the value of $A =$ _____

[El-Fayoum 22]

11. In the opposite bar model :

The value of $b =$ _____

b	
9,901	1,000

[Souhag 22]

12. The value of the variable in the equation : $b + 1,000 = 3,000$ is _____

[Souhag 23]

13. $854 + 0 =$ _____

[Cairo - Rod El-Farag 23]

14. If $H - 1,590 = 3,578$, then $H =$ _____

[Cairo 23]

15. $5,000 + 242 =$ _____

[Giza 23]

16. $8,617 - 1,769 =$ _____

[Cairo - El-Marg 23]

17. In the opposite bar model :

B = _____

235	
200	B

[Souhag 23]

18. $48 + 12 = 12 + \text{_____}$

2. Choose the correct answer.

1. The additive identity element is _____

[Port Said 24]

- A. 0 B. 1 C. 2 D. 3

2. $14 + 8 = 8 + 14$ is _____ property.

[Giza - October garden 24]

- A. associative B. additive identity C. distributive D. commutative

3. $13 + 7 = 7 + 13$, is the _____ property.

[Alex. 24]

- A. associative B. commutative C. additive identity D. otherwise

4. $18 + 0 = 18$ [_____ property].

[Alex. 24]

- A. commutative B. associative C. additive identity D. distributive.

5. $13 + 0 = 13$, is the _____

[Cairo - Khalifa and Mokattam 22]

- A. associative property B. commutative property
C. additive identity property D. None of the previous

6. Which equation would be best to include in an explanation of the commutative property of addition ?

[Cairo 24]

- A. $3 + 0 = 3$ B. $2 + 4 = 4 + 2$
C. $5 + 11 + 5 = 16 + 5$ D. $10 + 3 = 7 + 6$

7. Which of the following represents the commutative property in addition ?

[El-Kalyoubia 22]

- A. $635 + 492 = 492 + 635$ B. $0 + 847 = 847$
C. $[18 + 2] + 16 = 36$ D. $1 + 131 = 132$

8. $125,217 + 2,345$ ☐ $125,217 - 2,345$

[Giza 23]

- A. > B. < C. =

9. $25 + 99 = 24 + \text{_____}$

[Giza 23]

- A. 24 B. 25 C. 99 D. 100

10. $3 + 5 = 5 + \text{_____}$

[Giza 23]

- A. 1 B. 2 C. 3 D. 5

11. $35 + 0 = \text{_____}$

- A. 35 B. 0 C. 1 D. 350

12. If $614 - X = 600$, then $X = \text{_____}$

- A. 11 B. 12 C. 16 D. 14

13. $613 - 247 = \underline{\hspace{2cm}}$

[El-Sharkia 22]

A. 567

B. 434

C. 366

D. 807

14. $253 + [226 + 142] = [253 + \underline{\hspace{2cm}}] + 142$

[Alex. 23]

A. 253

B. 226

C. 142

D. 368

15. $6,199 + 8,049 = \underline{\hspace{2cm}}$

A. 41,248

B. 14,428

C. 14,248

D. 4,428

16. $91,024 + 32,549 = \underline{\hspace{2cm}}$

[Cairo - Rod El-Farag 23]

A. 123,563

B. 321,547

C. 123,573

D. 123,654

17. $8,000 - 2,345 = \underline{\hspace{2cm}}$

[Cairo 23]

A. 10,345

B. 6,345

C. 5,655

D. 5,565

18. If $500 + X = 625$, then $X = \underline{\hspace{2cm}}$

[Giza 23]

A. 1,125

B. 25

C. 125

D. 225

3. Answer each of the following.

1. Samir and Mohamed participated in a project. Samir paid 342,650 pounds, if the cost of the project is 668,500 pounds, how much did Mohamed pay? [Cairo - Heliopolis 22]

2. A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?

3. A road of 675 km length, if a train traveled a distance of 239 km from this road, what is the remaining distance of the road? [Giza - 6th October 22]

4. The country has provided a vaccination against the corona virus. In the first stage, 1,653,465 people were vaccinated and 3,312,447 were vaccinated in the second stage. What is the total number of people vaccinated in both stages? [El-Monofia - Quesna 22]

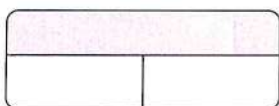
5. Ali bought a laptop for 7,250 L.E. and a mobile for 4,000 L.E. How much money did he pay? [Cairo - Rod El-Farag 23]

6. If the population of Matrouh Governorate is 517,901 people and the population of South Sinai Governorate is 112,211 people, then what is the difference between the population of Matrouh and the population of South Sinai? [Cairo 23]

7. In the equation $710 + G = 930$, find the value of G. [Alex. - El-Montaza 23]

8. $m - 35,462 = 2,741$

Bar model:

Solution: $\underline{\hspace{2cm}}$

[Ismailia 23]

9. In the equation $K + 226 = 349$, find the value of K. [El-Menia 24]

General Revision

On Unit 3

1. Complete.

1. 35 kilograms and 86 grams = _____ grams [Cairo 24]
2. _____ kg = 30,000 g [Alex. 24]
3. 6 kilograms = _____ grams [Ismailia 24]
4. 9,000 km = _____ m [EL-Menia 24]
5. 43 m = _____ cm [Luxor 24]
6. 5 km , 5 m = _____ m [Giza 24]
7. 2 days = _____ hours [Kafr El-Sheikh 24]
8. 2 liters = _____ milliliters [Alex. 24] [Cairo 24]
9. 9,000 grams = _____ kilograms [EL-Beheira 24] [EL-Menia 24]
10. 650 mm = _____ cm [Giza - Dokki 22]
11. 35 kg and 86 g = _____ g [EL-Kalyoubia 22]
12. 32 L , 77 mL = _____ mL [EL-Dakahlia 22]
13. A week and two days = _____ days [Suez 22]
14. A jug of 10 liters of water. How many milliliters does it have ? [Port Said 22]
15. 4 minutes and 20 seconds = _____ seconds [Kafr El-Sheikh 22]
16. 8 meters , 45 cm = _____ cm [EL-Fayoum 22]
17. 9,250 meters = _____ km + _____ m [Alex. - West 23]
18. 9,000 mL = _____ liters [Souhag 23]
19. Convert to the unit shown on the model.
 _____ grams

5 kg	275 grams
------	-----------

 [Souhag 23]
20. 8,000 grams = _____ kilograms [Cairo - Rod El-Farag 23]
21. 3 kg and 258 g = _____ g [Cairo 23]
22. 3 : 25 + 6 : 42 = _____ [Cairo 23]
23. 5 weeks = _____ days [Giza 23]
24. 6 m and 35 cm = _____ cm [Giza 23]
25. 9,000 mm = _____ cm [Alex. 23]
26. _____ m = 350 dm [EL-Sharkia - Diarb Nagm 22]

2. Choose the correct answer.

1. 10 weeks = _____ days. [Port Said 24]

A. 240
B. 70
C. 270
D. 600
2. 9 minutes and 10 seconds = _____ seconds. [Cairo 24]

A. 310
B. 560
C. 550
D. 600

3. 2 days = _____ hours. [Alex. 24]
 A. 180 B. 21 C. 48 D. 30
4. 4 hours = _____ minutes. [Alex. 24]
 A. 40 B. 300 C. 240 D. 60
5. 5 hours = _____ minutes. [Luxor 24]
 A. 600 B. 24 C. 300 D. 500
6. 1 day and 5 hours = _____ hours [Cairo - Khalifa and Mokattam 22]
 A. 29 B. 65 C. 15 D. 35
7. 5 L = _____ mL [Giza 24]
 A. 5,000 B. 500 C. 50 D. 5
8. 13 liters and 30 mL = _____ mL [Giza - 6th October 22]
 A. 1,330 B. 13,030 C. 43 D. 3,013
9. 5 kg = _____ g [Port Said 24] [Cairo 24]
 A. 5 B. 50 C. 500 D. 5,000
10. 423 cm = _____ [Cairo - Heliopolis 22]
 A. 23 m , 4 cm B. 42 m , 3 cm
 C. 4 m , 23 cm D. 3 m , 42 cm
11. 5,000 m = _____ [Kafr El-Sheikh 24]
 A. 5 mm B. 500 cm C. 6 cm D. 5 km
12. 12 km , 45 m = _____ m [El-Monofia 24]
 A. 1,245 B. 4,512 C. 12,045 D. 1,200,045
13. The best unit to measure the distance between two cities is _____ [Alex. 24]
 A. meter B. liter C. mm D. km
14. Using the relationship between units of length , choose the correct answer to complete the following table : [Alex. - West 22]
- | kilometer | meter | centimeter |
|-----------|--------|------------|
| 60 | 60,000 | ? |
- A. 600 B. 6,000 C. 60,000 D. 6,000,000
15. 6,325 g = _____ [El-Dakahlia 22]
 A. 6,000 kg , 352 g B. 63 kg , 25 g
 C. 60 kg , 325 g D. 6 kg , 325 g
16. The capacity of a juice can is 1 liter and 500 mL , then its capacity in milliliters = _____ mL [Ismailia 22]
 A. 150 B. 1,500 C. 15,000 D. 1,005

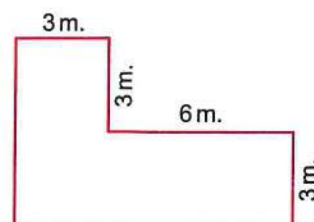
17. Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes, we _____ [Suez 22]
 A. add 6 to 60 B. add 6 to 24 C. multiply 6 by 60 D. multiply 6 by 24
18. 2 days and 2 hours = _____ hours [Port Said 22]
 A. 22 B. 4 C. 62 D. 50
19. 8 kilometers , 45 meters = _____ meters [Souhag 23]
 A. 845 B. 855 C. 8,000,045 D. 8,045
20. 5 weeks and 5 days = _____ days [Cairo - Rod El-Farag 23]
 A. 55 B. 35 C. 40 D. 25
21. 10 meters = _____ centimeters [Cairo 23]
 A. 10 B. 100 C. 1,000 D. 7
22. 5 kg and 861 g = _____ g [Cairo 23]
 A. 5,861 B. 58,160 C. 5,000,861 D. 5,861,000
23. 3 liters = _____ milliliters [Giza 23]
 A. 3 B. 30 C. 300 D. 3,000
24. _____ is a measuring unit of mass. [Giza 23]
 A. km B. Liter C. Hour D. kg
25. A week and 3 days = _____ days [Cairo 24] [Souhag 23]
 A. 7 B. 10 C. 13 D. 17

3. Answer each of the following.

1. List the following lengths in an ascending order. [El-Menia - Samalot 22]
 8 m , 8,000 cm , 8 km , 8 mm
2. The day is 24 hours , how many hours are there in 3 days ? [Giza 23]
3. Hossam sleeps 8 hours each day. [El-Monofia 23]
 How many minutes does Hossam sleep each day ?
4. Amany is a swimmer. She spends half of an hour every day swimming. How many minutes in total does she swim for during a 5-days ? [Aswan 23]
5. A train covers 2 km in one minute , what is the distance the train covers in 10 minutes in kilometers and in meters ?
6. The duration of a film show is 2 hr. , 15 min. It starts at 3 : 30 P.M. When will it end ?
7. A fish tank with a capacity of 50 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely ?

1. Complete.

1. The length of rectangle 7 cm , and width 3 cm , then its area = _____ cm^2 [EL-Menia 24]
2. A rectangle of length 7 cm , width 3 cm , then its perimeter = _____ cm [EL-Menia 24]
3. The perimeter of the rectangle of 6 m length and 4 m width = _____ m [Alex. 24]
4. A rectangle has 7 cm wide, and 13 cm long, then its area = _____ cm^2 [Alex. 24]
5. A square has an area of 16 square centimeters, then its perimeter = _____ cm [Suez 22]
6. The length of the side of a square whose perimeter is 28 cm is _____ cm [Beni Suef 22]
7. Area of rectangle its length is 10 cm, width is 7 cm = _____ cm^2 [Cairo 24]
8. A square of side length 6 meters, then its perimeter = _____ meters [Souhag 23]
9. A square of side length 3 cm, then its perimeter = _____ cm [Cairo – Rod EL-Farag 23]
10. A square of side length 5 meters , then its perimeter = _____ meters [EL-Beheira 24]
11. A square of side length 8 cm , then the perimeter = _____ cm [Souhag 24]
12. A rectangle its length is 7 cm, and its width is 5 cm, then its area = _____ cm^2 [Cairo 23]
13. A rectangle has length [L] and width [W], its perimeter = _____ [Cairo 23]
14. A carpet in the shape of a square of side length 3 m, its perimeter = _____ m [Giza 23]
15. Area of a square = side length $\times$ _____ [Ismailia 23]
16. If the side length of the square is [S], then its perimeter rule = _____ $\times$ _____ [Alex. – Al-Agamy 23]
17. The area of the opposite figure equals _____ m^2
18. The side length of the square = its perimeter $\div$ _____
19. The width of the rectangle = its area $\div$ _____
20. A square has a perimeter 12 cm, then its area is _____



2. Choose the correct answer.

1. A rectangle its length is [L] and its width is [W] , what is its perimeter ?
[EL-Menia 24] [Cairo - Khalifa and Mokattam 22]
- A. $L + W$ B. $L \times W$ C. $2 \times [L + W]$ D. $[2 \times L] + W$

2. A rectangle its length 8 cm , its width 4 cm , then its perimeter = _____ cm [Cairo 24]
 A. 16 B. 32 C. 28 D. 24
3. The width of a rectangular room is 4 m and its length is 6 m
 , its area = _____ [Kafr El-Sheikh 24]
 A. 24 m² B. 60 m² C. 10 m² D. 30 m²
4. A square of side length 1 cm , then its area = _____ cm² [El-Menia 24]
 A. 1 B. 4 C. 10 D. 14
5. The area of the square of side length 8 cm is _____ cm² [Kafr El-Sheikh 24]
 A. 32 B. 24 C. 64 D. 16
6. A rectangle its length = 7 cm , its width = 5 cm , then its area = _____ cm² [Giza 24]
 A. 12 B. 24 C. 35 D. 75
7. Area of rectangle with length 9 cm and width 6 cm = _____ cm² [El-Dakahlia 22]
 A. 3 B. 30 C. 15 D. 54
8. A rectangle of length 20 cm and width 10 cm , then its area is equal
 to _____ square cm. [Damietta 22]
 A. $2 \times 20 + 2 \times 10$ B. $20 + 10$
 C. 60 D. 200
9. Area of a square of side length 5 cm = _____ cm² [Cairo 23]
 A. 20 B. 25 C. 15 D. 30
10. Perimeter of a square of side length 7 cm = _____ cm [Cairo 23]
 A. 42 B. 28 C. 27 D. 14
11. The perimeter of the rectangle of 8 cm long and 2 cm wide equals _____ [Souhag 23]
 A. 20 cm B. 20 cm² C. 16 cm D. 16 cm²
12. The perimeter of a square is 40 cm , then its side length = _____ cm [Cairo 23]
 A. 4 B. 1,600 C. 160 D. 10
13. A rectangle has length 30 cm and width 5 cm , then its area = _____ cm²
 A. $5 + 30 \times 2$ B. 70 C. 150 D. 300
14. Area of rectangle = length $\times$ _____ [Ismailia 23]
 A. itself B. width C. 4 D. height
15. The area of the square whose side length is 6 cm = _____ cm² [Souhag 23]
 A. 11 B. 30 C. 24 D. 36
16. The perimeter of the square whose side length is 5 cm is _____ cm [Giza 23]
 A. 10 B. 15 C. 20 D. 25
17. Area of the rectangle with 7 cm long and 3 cm wide equals _____ cm² [Giza 23]
 A. 20 B. 21 C. 24 D. 35

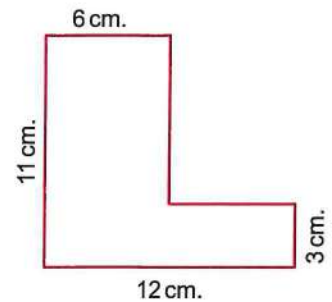
18. A square of side length 8 cm , then its perimeter = _____ cm [Alex. 23]
 A. 16 B. 24 C. 32 D. 40
19. A rectangle with an area 30 cm^2 , if its length is 6 cm , then its width equals _____
 A. 6 cm B. 5 cm C. 11 cm D. 30 cm

3. Answer each of the following.

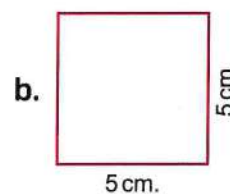
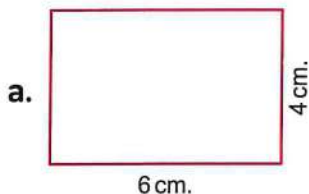
1. A rectangular gymnasium with 7 meters long and 4 meters wide.
 Find its perimeter. [Cairo - Heliopolis 22]
2. A squared picture with side length 8 cm , Hussein wants to make a piece of glass to
 cover this picture , what is the area of the glass piece ? [El-Kalyoubia 22]
3. A square-shaped room has a side length 4 meters.
 What is the area of the ground of the room in square meters ? [Souhag 22]
4. A rectangle of length 5 cm and width 3 cm. Find the perimeter. [Cairo - Rod EL-Farag 23]
5. Find the perimeter of the rectangle whose length is 16 cm and its width
 is 14 cm [Cairo 23]
6. Amgad has a garden in a squared shape with side length 6 m , what the area
 of this garden ? [Giza 23]
7. Find the area and the perimeter
 of the opposite figure [Ismailia 23]

A = _____

P = _____



8. Find the perimeter of each of the following figures. [Souhag 23]



9. The side length of a square is 7 cm , find its : [Ismailia 24]
 a. perimeter b. area

1. Complete.

1. $500 \times 7 = \underline{\hspace{2cm}}$ [El-Monofia - Sadat City 23]
2. If $A \times 6 = 18$, then $A = \underline{\hspace{2cm}}$ [Giza - Abo El-Nomros 23]
3. $20 \times 6 = \underline{\hspace{2cm}} \times 20$ [Cairo - El-Shrouk 23]
4. $600 \times 3 = \underline{\hspace{2cm}}$ [Cairo - El-Shrouk 23]
5. The product of multiplying a number $\times$ zero = $\underline{\hspace{2cm}}$ [El-Monofia 23]
6. Maha saves 10 pounds of her expenses every day. How much does she save per week?
She saves $\underline{\hspace{2cm}}$ [El-Monofia - Sers El-Layyan 23]
7. $30 \times 50 = \underline{\hspace{2cm}}$ [Ismailia 23]
8. $6,000 \times \underline{\hspace{2cm}} = 42,000$ [Cairo 23]
9. $200 \times 3 = \underline{\hspace{2cm}}$ [Cairo - El-Nozha 23]
10. If $1,000 \times Z = 3,000$, then $Z = \underline{\hspace{2cm}}$ [Cairo - El-Nozha 23]
11. $(42 \times 15) \times \underline{\hspace{2cm}} = 42 \times (15 \times 25)$ [Giza 23]
12. $12 \times 45 = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$ is called commutative property. [Alex. - Al-Agamy 23]
13. $7 + 7 + 7 + 7 = 7 \times \underline{\hspace{2cm}}$ [Giza 23]
14. $30 \times 70 = \underline{\hspace{2cm}}$
15. $\underline{\hspace{2cm}} \times 70 = 3,500$ [Ismailia 23]
16. 5 times $\underline{\hspace{2cm}} = 45$ [Alex. - El-Montaza 23]

2. Choose the correct answer.

1. $15 \times 17 = 17 \times 15$ represents the $\underline{\hspace{2cm}}$ property. [Luxor 24]
 A. identity multiplicative B. distributive
 C. associative D. commutative
2. The multiplicative identity is $\underline{\hspace{2cm}}$ [El-Monofia 24]
 A. 0 B. 10 C. 2 D. 1
3. If $7 \times 5 = a \times 7$, then $a = \underline{\hspace{2cm}}$ [Giza 24]
 A. 5 B. 8 C. 7 D. 2
4. If $a \times 36 = 36 \times 5$, then $a = \underline{\hspace{2cm}}$ [Luxor 24]
 A. 5 B. 36 C. 1 D. 6
5. If $a \times 13 = 13 \times 7$, then $a = \underline{\hspace{2cm}}$ [El-Menia 23]
 A. 1 B. 2 C. 7 D. 4

6. $6 \times 0 =$ _____ [El-Menia 23]
 A. 0 B. 1 C. 2 D. 3
7. Which of the following represents the associative property ?
 A. $11 \times 129 = 129 \times 11$ B. $2 \times [5 \times 3] = [2 \times 5] \times 3$ [El-Beheira 23]
 C. $0 \times 17 = 0$ D. $[2 \times L] \times w$
8. $5 \times 7 = 7 \times 5$ the property is called _____ [El-Beheira 23]
 A. associative B. commutative C. additive identity D. none of the previous
9. $25 \times 32 = 32 \times$ _____ [El-Kalyoubia 23]
 A. 32 B. 25 C. 30 D. 20
10. $4 \times 100 =$ _____
 A. 40 B. 400 C. 4,000 D. 40,000
11. If $850 \times m = 850$, then $m =$ _____ [Ismailia 23]
 A. 1 B. 850 C. 2 D. 0
12. Which choice best shows the zero property of multiplication ? [Cairo - El-Nozha 23]
 A. $1 \times 5 = 5$ B. $9 \times 6 = 6 \times 9$
 C. $6 \times 10 = 60$ D. $0 \times 5 = 0$
13. 10 times the number 275 = _____
 A. 2,750 B. 27,510 C. 10,275 D. 275,000
14. 3 times the number 8 is _____ [El-Menia 24]
 A. 2 B. 14 C. 24 D. 54
15. 10 times the number 43 = _____ [Port Said 24]
 A. 430 B. 4,300 C. 43,000 D. 430,000
16. 640 hundreds = _____ tens [Luxor 24]
 A. 64 B. 64,000 C. 640 D. 6,400
17. The number 18 is 6 times the number _____ [Beni Suef 24]
 A. 2 B. 3 C. 6 D. 9
18. 36 is _____ times the number 9 [Port Said 24]
 A. 6 B. 4 C. 5 D. 7
19. The number 30 equals 5 times the number _____ [Cairo 24]
 A. 3 B. 4 C. 6 D. 8
20. 25 is 5 times as many as _____ [Port Said 24]
 A. 5 B. 10 C. 15 D. 125

21. 45 is _____ times the number 5 [Cairo - Al-Khalifa and Al-Mokattam 23]
 A. 9 B. 6 C. 5 D. 40
22. The number 42 is 6 times the number _____ [Giza 23]
 A. 7 B. 9 C. 8 D. 5
23. The number 30 equals 5 times the number _____ [Cairo - El-Marg 23]
 A. 6 B. 5 C. 150 D. 25
24. A building is 20 meters high. A bridge is 5 meters long. How many times the building is longer than the bridge ? [Alex. - Al-Agamy 23]
 A. 3 B. 4 C. 15 D. 10
25. In the equation $6 \times b = 42$, then $b =$ _____ [Alex. - West 23]
 A. 8 B. 5 C. 6 D. 7
26. $34 \times$ _____ $= 3,400$ [Alex. - West 23]
 A. 1 B. 10 C. 100 D. 1,000
27. $80 \times 60 =$ _____ $\times 100$ [Giza 23]
 A. 84 B. 80 C. 48 D. 4,800
28. $2 \times [5 \times 4] = [2 \times$ _____ $] \times 4$ [Souhag 23]
 A. 0 B. 1 C. 10 D. 5

3. Answer each of the following.

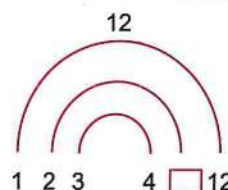
- Sarah walked 5,000 meters every day for 9 days, what is the total number of kilometers that Sarah walked ? [Cairo - El-Shrouk 23]
- Mariam bought 4 mobiles, the price of each mobile is 1,000 pounds, how much did Mariam pay ? [Giza 23]
- Ahmed bought 10 pens, if the price of a pen is 200 piasters, what is the price of all pens ? [Giza 23]
- Ali travelled 8 days continuously, he travelled 3,000 m each day. How many kilometers did he travel in all ? [Souhag 23]
- Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat ? [Giza - 6th October 22]
- Hany works 30 hours a week. If he gains L.E. 8 per hour. How much does Hany gain in a week ?

General Revision

On Unit 6

1. Complete.

1. _____ is the only even prime number. [Cairo - EL-Khalifa and EL-Mokattam 22] [EL-Monofia 24]
2. _____ is the smallest prime number. [Ismailia 24]
3. The smallest even prime number is _____. [Souhag 24]
4. The number that has only two factors and their sum equals 8 is _____. [EL-Monofia - Quesna 22]
5. The common factor of all numbers is _____. [Luxor 24] [EL-Dakahlia 22]
6. The numbers 1, 3, 9, 27 are all factors of _____. [Damietta 22]
7. The number of factors of the prime number is _____. [EL-Menia - Samalot 22]
8. _____ is the common multiple for all numbers. [EL-Monofia - Sadat City 23]
9. The number 4 has _____ factors.
10. Write 3 multiples of 5 _____, _____, _____. [Beni Suef 24]
11. One of the common multiples of 2 and 3 is _____. [EL-Menia 24]
12. The missing factor
in the opposite
rainbow
is _____
13. The smallest prime number is _____. [Ismailia 24] [Cairo 23]
14. The G.C.F of 8 and 16 is _____. [Giza 23]
15. The factor pair 3 and 8 is for the number _____
16. The G.C.F of 20 and 30 is _____
17. If $4 \times 9 = 36$, then _____ is a multiple of the two numbers _____ and _____
18. If $3 \times 5 = 15$, then 15 is multiple of _____ and _____. [Giza 24]
19. If $7 \times 3 =$ _____, then _____ is a multiple of the two numbers 7 and 3
20. The missing factor in
the opposite factor
T-chart is _____
21. The factors of 12 are _____



[EL-Monofia - Sers EL-Layyan 23]

Factors of 18

1	18
2	○
3	6

[Cairo 24]

12

2. Choose the correct answer.

1. The only even prime number is _____. [Cairo 24]
 A. 2 B. 3 C. 4 D. 6
2. Which of the following is a prime number? [El-Beheira 24]
 A. 10 B. 15 C. 19 D. 21
3. The common factor of all numbers is _____. [El-Menia 24] [Port Said 24]
 A. 0 B. 1 C. 2 D. 3
4. Which of the following is NOT a multiple of 7? [Cairo - Heliopolis 22]
 A. 42 B. 63 C. 707 D. 27
5. Which is NOT a common multiple of 9 and 6? [Cairo - El-Khalifa and El-Mokattam 22]
 A. 36 B. 54 C. 27 D. 18
6. Which number is the greatest common factor [G.C.F] of 12 and 6?
 A. 2 B. 3 C. 6 D. 12 [Alex. - West 22]
7. The prime number has _____ factors only. [El-Dakahlia 22]
 A. 0 B. 1 C. 2 D. 4
8. The multiples of 6 is _____, _____, _____, _____. [Cairo 24]
 A. 2, 4, 6, 8 B. 6, 12, 18, 24 C. 4, 8, 12, 16 D. 3, 6, 9, 12
9. The number 27 is a multiple of the number _____. [El-Monofia 24]
 A. 7 B. 8 C. 9 D. 2
10. The number whose factors are 1, 3 and 9 is _____. [El-Menia 24]
 A. 3 B. 9 C. 12 D. 13
11. The number _____ is a factor of the number 63 [Cairo 24]
 A. 5 B. 9 C. 11 D. 12
12. _____ is a factor of 63 [Port Said 22]
 A. 2 B. 5 C. 7 D. 11
13. The list of all the factors of 16 is _____. [Beni Suef 22]
 A. 1, 16 B. 2, 4, 8 C. 1, 2, 4, 8, 16 D. 1, 2, 4, 6, 8, 16
14. _____ is the smallest prime number. [El-Monofia - Sadat City 23]
 A. 0 B. 1 C. 2 D. 3
15. _____ are the factors of 6 [Giza 24]
 A. (2, 3) B. (1, 6) C. (1, 2, 3, 6) D. (1, 2, 4, 6)
16. The number _____ is a multiple of 10 [Port Said 24]
 A. 2 B. 5 C. 15 D. 20
17. The number 16 is a common multiple of _____. [Alex. 24]
 A. 2 and 4 B. 7 and 2 C. 5 and 3 D. 8 and 9
18. _____ is a factor of 14. [El-Monofia - Sadat City 23]
 A. 2 B. 3 C. 4 D. 5

19. The even number which is a multiple of : 3 , 4 , 6 together is _____ [Aswan 23]
 A. 20 B. 18 C. 28 D. 12
20. _____ is a multiple of 2 [Aswan 23]
 A. 3 B. 5 C. 11 D. 8
21. Which of the following is a prime number ? [El-Menia 23]
 A. 4 B. 7 C. 15 D. 18
22. _____ is a common multiple of all numbers. [El-Menia 23]
 A. 0 B. 1 C. 2 D. 3
23. The smallest odd prime number is _____ [Cairo 23]
 A. 0 B. 1 C. 2 D. 3
24. 25 is a multiple of _____ [Cairo 23]
 A. 5 B. 7 C. 9 D. 10
25. 30 is a multiple of _____ [El-Beheira 23]
 A. 8 B. 7 C. 6 D. 4
26. The number _____ is a factor of the number 8 [Cairo - El-Salam 23]
 A. 16 B. 24 C. 32 D. 4

3. Answer each of the following.

1. Find the G.C.F of 25 and 35 [Giza - Dokki 22]
2. Write all factors of the number 24 , then decide if the number is a prime or composite. [Giza - 6th October 22]
3. Write the common factors of 12 and 18 , then find the greatest common factor [G.C.F]. [El-Sharkia 22]
4. Find the G.C.F of 14 and 21 [El-Monofia 24]
5. Find the G.C.F of 16 and 24 [Alex. 24] [Ismailia 24]
6. Find the G.C.F of 20 and 15 [Port Said 24]
7. Find the G.C.F of 30 and 45 [Ismailia 22]
8. An even number between 20 and 30 some of its factors include : 1 , 2 , 4 , 7 and 14. What is it ? [Suez 22]
9. Find 4 multiples of the number 9 [El-Monofia 23]

1. Complete.

1. The product of : $5 \times 2,523$ is equal to _____

[Aswan 23]

2. $512 \div 8 =$ _____

[El-Kalyoubia 23]

3. $363 \div 3 =$ _____

[El-Menia 24]

4. $535 \div 5 =$ _____

[Giza 24]

5. $778 \div 2 =$ _____

[Giza 24]

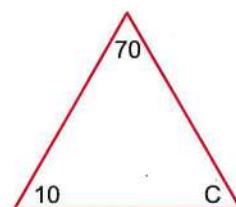
6. $5 \div 4 =$ _____, remainder _____

[Alex. 23]

7. In the opposite model :

C = _____

[Souhag 23]



8. $5 \times 467 = 5 \times 400 + 5 \times$ _____ $+ 5 \times 7$

[Ismailia 23]

9. $4,000 \div 4 =$ _____

[Cairo - El-Nozha 23]

10. $23 \div 5 = 4$ R _____

[Cairo 23]

11. $912 \div 3 =$ _____

[Alex. - West 23]

12. $550 \div 5 =$ _____

[Giza - Awseem 23]

13. If $641 \times 7 = 4,487$, then $4,487 \div 7 =$ _____

[Giza 23]

14. $26 \div 5 =$ _____ and remainder _____

[Ismailia 24]

15. $17 \times 6 =$ _____

[Cairo 24]

16. The quotient in $480 \div 10 = 48$ is _____

[Souhag 23]

17. If $770 \div 10 = 77$, then the divisor is _____

[Alex. - El-Montaza 23]

18. $38 \div 6 =$ _____ R2

[Cairo 23]

19. $606 \div 6 =$ _____

[Cairo - Heliopolis 23]

20. $8 \times$ _____ $= 8 \times 600 + 8 \times 50 + 8 \times 3$

21. The model

$5 \times 100 = 500$	$5 \times 3 = 15$
----------------------	-------------------

 represents the problem _____ $\div 5$

100 3 R2

22. If $632 \times 4 = 2,528$, then $2,528 \div 4 =$ _____

[Alex. 24]

2. Choose the correct answer.

1. $153 \div 3 = 51$, then the divisor is _____

[Port Said 24]

A. 153

B. 51

C. 3

D. 0

2. In the operation $79 \div 11 = 7$ R 2 the divisor is _____

[Cairo 24]

A. 2

B. 7

C. 11

D. 79

3. $412 \div 4 =$ _____

[El-Menia 24]

A. 12

B. 123

C. 103

D. 13

4. $456 \times 4 =$ _____
 A. 1,823 B. 18,323 C. 1,824
5. In the equation : $35 \div 5 = 7$, the divisor is _____
 A. 35 B. 5 C. 7
6. $939 \div 3 =$ _____
 A. 101 B. 303 C. 313
7. $125 \times 5 =$ _____
 A. 625 B. 130 C. 605
8. $240 \div 4 =$ _____
 A. 6 B. 60 C. 8
9. The opposite model represents the product 7×26 , then the missing value in the model is _____
 A. 6 B. 7
 C. 42 D. 420
10. The missing value in the opposite bar model represents _____
 A. $3 \times 7 = 21$ B. $30 \times 20 = 600$
 C. $30 \times 7 = 210$ D. $20 \times 7 = 140$
11. In the area model 17×40 , the missing number = _____
 A. 70 B. 47
 C. 280 D. 17
12. The opposite model represents the product of 7×36 , then the missing value in the model is _____
 A. 6 B. 7
 C. 42 D. 420
13. The opposite model shows the product of 36×4 , then the value of X = _____
 A. 120 B. 24
 C. 18 D. 144
14. In the opposite model 52×6 , then X = _____
 A. 6 B. 12
 C. 60 D. 52
15. The opposite model shows the product of 7×36 , then the value of X = _____
 A. 6 B. 7
 C. 42 D. 420
16. Maha used the opposite model of rectangle area to find the result of $369 \div 3$, then M = _____
 A. 123 B. 9
 C. 3 D. 396

[Port Said 24]

D. 18,564

[El-Monofia - Sadat City 23]

D. 1

[Aswan 23]

D. 191

[Cairo 23]

D. 505

[El-Beheira 23]

D. 40

[Cairo 24]

	20	6
7	140	_____

[Alex. 24]

	20	7
30	$30 \times 20 = 600$	_____

[Port Said 24]

	10	7
40	400	?

[El-Monofia 24]

	30	6
7	210	_____

[El-Monofia 24]

	30	6
4	120	X

[El-Monofia 24]

	50	2
6	300	X

[El-Beheira 24]

	30	6
7	210	X

[Cairo - El-Salam 23]

	100	20	3
3	300	60	M

17. $505 \div 5 =$ _____ [Cairo - El-Salam 23]
 A. 510 B. 11 C. 101 D. 21
18. The divisor in the operation $91 \div 7 = 13$ is _____ [Giza - Abo El-Nomros 23]
 A. 7 B. 13 C. 75 D. 91
19. Which of the following represents 35×6 ? [El-Kalyoubia 23]
 A. $[5 \times 6] + [30 \times 6]$ B. $[5 \times 6] + [3 \times 6]$
 C. $[50 \times 6] + [3 \times 6]$ D. $[50 \times 6] + [30 \times 6]$
20. $200 \div 2 =$ _____ [El-Monofia 23]
 A. 1 B. 10 C. 100 D. 2
21. If $605 \div 10 = 60 \text{ R } 5$, then the divisor is _____ [El-Monofia - Quesna 23]
 A. 5 B. 10 C. 60 D. 605
22. If 37 oranges are distributed equally among 5 plates ,
 how many oranges will be left ? [El-Monofia 23]
 A. 5 B. 2 C. 7 D. 0
23. $26 \div 4 =$ _____ [Ismailia 23]
 A. 5 R 5 B. 6 R 2 C. 7 R 2 D. 4 R 2
24. The opposite model represents the product of 32×6 [Cairo 23]
 , then the missing value in the model is _____
- | | | |
|---|-----|---|
| | 30 | 2 |
| 6 | 180 | — |
- A. 6 B. 12
 C. 42 D. 8
25. $21 \times 4 =$ _____ [Cairo - El-Nozha 23]
 A. 84 B. 123 C. 153 D. 68

3. Answer each of the following.

1. If the mass of a box is 124 kg , then find the mass of 5 boxes with the same mass. [El-Monofia - Sadat City 23]
2. By using an area model strategy , solve the problem that follows :
 The route that the river bus travels is 58 km long. How many kilometers does the river bus travel if it follows this route 9 times daily ? [Aswan 23]
3. Rashida saved 545 L.E. to buy a toy. She did this by saving 5 L.E. every day. How many days did she have to work to save enough money to buy the toy ? [Aswan 23]
4. There are 72 students in the playground , and we need to divide the students into teams , so that each team includes 9 students. How many teams can be formed ? [El-Beheira 23]
5. A sweet box filled with 15 sweet pieces , what is the number of sweets in 7 boxes ? [El-Kalyoubia 23]
6. Find the quotient of : $246 \div 6 =$ _____ [Alex. - First Montaza 23]
7. Ahmed has 84 stickers , he distributed them equally among 7 of his friends , what is the share of each one ? [Cairo - El-Nozha 23]

General Revision

On Unit 8

1. Complete.

- | | |
|---|---|
| 1. $3 \times 5 - 2 =$ _____ | [Cairo - Heliopolis 22] |
| 2. $18 - 3 \times 4 =$ _____ | [Giza 24] |
| 3. $5 \times 3 + 6 =$ _____ | [Cairo 23] |
| 4. $24 \div [4 - 1] + 1 =$ _____ | [Cairo - Rod El-Farag 23] |
| 5. $6 + 3 \times 4 - 5 =$ _____ | [Cairo 23] |
| 6. $[16 + 8] \div 4 + 2 =$ _____ | [Ismailia 23] |
| 7. $32 \div 4 - 6 =$ _____ | [Giza - Awseem 23] |
| 8. $40 \div [5 + 3] - 1 =$ _____ | [Cairo - El-Marg 23] |
| 9. $15 + 20 \div 4 =$ _____ | [Giza 23] |
| 10. $2 + 6 \times 4 - 8 =$ _____ | [Cairo - Al-Khalifa and Al-Mokattam 23] |
| 11. $5 \times 3 + 5 =$ _____ | [Cairo 23] |
| 12. $[3 \times 5] - [2 \times 6] =$ _____ | [El-Menia 23] |
| 13. $2 \times 3 + 4 =$ _____ | [El-Menia 24] |
| 14. $[30 - 6] \div 3 =$ _____ | |
| 15. $36 \div 4 + 2 =$ _____ | [Alex. 24] |

2. Choose the correct answer.

- | | | | |
|---|--------------------|----------------------|-------------------------|
| 1. What is the first step of solving $12 + 30 \div 6$? | | | |
| A. $12 + 30$ | B. $12 \div 6$ | C. $30 \div 6$ | D. $12 + 6$ |
| 2. Which of the following equals 9 ? | | | |
| A. $25 \div 5 + 4$ | B. $25 - 10 - 4$ | C. $3 \times 3 + 2$ | D. $8 - 2 \times 3 + 1$ |
| 3. Which of the following = 6 ? | | | [Giza 23] |
| A. $3 \times 1 + 2$ | B. $12 + 6 \div 3$ | C. $18 - 3 \times 4$ | D. $24 \div 6 - 2$ |
| 4. $15 - 3 \times 4 =$ _____ | | | [Alex. 24] |
| A. 48 | B. 3 | C. 8 | D. 20 |
| 5. $6 + 4 \div 2 =$ _____ | | | [Alex. 24] |
| A. 5 | B. 6 | C. 7 | D. 8 |

6. $20 \div 4 - 3 = \text{_____}$

[Alex. - El-Montaza 23]

A. 20

B. 6

C. 2

D. 9

7. $12 + 6 \div 3 = \text{_____}$

[El-Monofia - Berket El-Sabaa 23]

A. 14

B. 6

C. 1

D. 16

8. Which is the first step in evaluating $18 - 15 + 3 \times 8 - 2$?

[Ismailia 23]

A. $18 - 15$

B. $15 + 3$

C. 3×8

D. $8 - 2$

9. $3 + 2 \times 5 = \text{_____}$

[Souhag 23]

A. 13

B. 14

C. 10

D. 25

10. $4 + 10 \times 2 - 1 = \text{_____}$

[Souhag 23]

A. 41

B. 27

C. 23

D. 14

11. $5 + 2 \times 3 = \text{_____}$

[Giza 23]

A. 10

B. 6

C. 11

D. 8

12. $9 + 2 \times [15 \div 5] = \text{_____}$

[Giza - Awseem 23]

A. 15

B. 21

C. 11

D. 18

13. $5 \times 4 + 6 = \text{_____}$

[Alex. - West 23]

A. 26

B. 25

C. 50

D. 34

14. $24 \div [4 - 1] + 2 = \text{_____}$

[Alex. - Al-Agamy 23]

A. 10

B. 9

C. 8

D. 7

15. $18 \div 3 + 4 - 2 = \text{_____}$

[Cairo - El-Nozha 23]

A. 8

B. 16

C. 2

D. 0

16. $[8 + 2] \div 2 = \text{_____}$

[Cairo - El-Nozha 23]

A. 4

B. 5

C. 7

D. 12

17. $6 \times 4 - 4 = \text{_____}$

[Cairo - El-Shrouk 23]

A. 15

B. 20

C. 24

D. 64

3. Answer each of the following.

1. Use the order of operations to find : $7 + 12 \times [4 + 6]$

[Cairo 23]

2. Find the value of : $16 \div 4 - 2$

[Giza 23]

3. Find the value of : $25 - 3 \times 5 + 2$

[Cairo 23]

4. Ahmed walked 5 kilometers every day for 3 weeks. The next week he walked 50 kilometers. How many kilometers did he walk over those 4 weeks ?

Directorates Exams



1

Cairo Governorate

Misr El-Kadima
Mathematics Inspection

1. Choose the correct answer:

1. 3 Weeks and two days = _____ days

- A. 21 B. 17 C. 19 D. 23

2. A square with side length S , what is its area ?

- A. $4 \div S$ B. $4 + S$ C. $4 \times S$ D. $S \times S$

3. _____ = $[3 + 7] \times 3$

- A. 6 B. 5 C. 30 D. 1

4. The tape diagram in the opposite figure represents _____

- A. 40 B. $5 - 5$ C. 5×5 D. $5 + 5$



5. The place value of the number 4 in the number 124,356,952 is _____

- A. Thousands. B. Hundred thousands.
C. Millions. D. Tens millions.

6. The number $500 + 2,000 + 30,000$ is written in the _____ form.

- A. standard B. expanded C. verbal D. analytical

7. All of the following are properties of addition operation except _____ property.

- A. associative B. commutative C. estimation D. neutral element

8. Which of the following numbers is a prime number?

- A. 0 B. 1 C. 10 D. 11

9. The number 12 is equal to 3 times the number _____

- A. 4 B. 40 C. 30 D. 3

2. Answer the following questions:

1. Hossam has 1,200 minutes in his call balance, so he used 700 minutes of them.

How many minutes are left?

Number of remaining minutes = _____ minutes

2. Using a rectangular area model. Find the result of 5×34 .

3. Mahi walked 14 kilometers every day for two weeks. The following week she walked 56 km.

How many kilometers did she walk during those three weeks?

She walked = _____

4. Arrange the following numbers in a descending order:

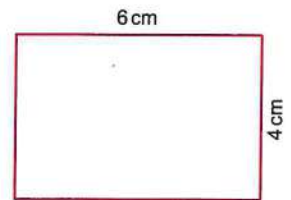
23,125 , 20,137 , 37,123

The order is : _____ , _____ , _____

5. Calculate the area and the perimeter of the opposite figure.

Perimeter = _____

Area = _____



6. Find the greatest common factor [G.C.F.] of the numbers 40 and 50.

7. A number of balloons were distributed among 7 children, so each child took 3 balloons and 6 balloons remained, how many balloons are there?

Number of all balloons = _____

2

Cairo Governorate



Heliopolis Educational Zone
St. Joseph's School

1. Choose the correct answer:

1. A week and 4 days = _____ days

A. 11 B. 14 C. 28 D. 64

2. The number _____ is a composite [not a prime] number.

A. 17 B. 19 C. 21 D. 23

3. $4 + 2 \times 5 - 5 =$ _____

A. 0 B. 4 C. 9 D. 25

4. The digit in the hundred thousands place in the number 54,869,321 is _____

A. 4 B. 5 C. 6 D. 8

5. The area of the square of side length 7 cm is _____ cm^2

A. 14 B. 28 C. 49 D. 70

6. The identity number of addition is _____

A. 0 B. 1 C. 2 D. 10

7. 59,567,545 [to the nearest million] $\approx$ _____ millions

A. 6 B. 59 C. 60 D. 510

8. The best choice shows the associative property of multiplication is _____

A. $5 \times 1 = 5$ B. $5 \times 3 = 3 \times 5$

C. $[3 \times 5] \times 2 = 3 \times [5 \times 2]$ D. $0 \times 5 = 0$

9. If $1,000 - y = 50$, then $y =$ _____

A. 1,050 B. 1,500 C. 950 D. 905

2. Answer the following questions:

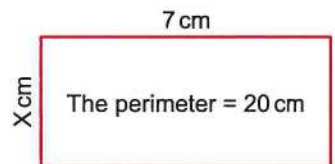
1. Mariam was training for marathon. Her goal was to run for 1 hour and 30 minutes. If she started running at 8 : 35, what time did she finish running?

The time she finished = _____

2. In the given rectangle , find the unknown X ,
then find the area of the rectangle

X = _____

The area = _____



3. Find the result of each:

• $35 \times 30 =$ _____

• $924 \div 6 =$ _____

4. If $b - 53,500 = 76,500$, create a bar model and find the value of b.

5. a. The capacity of a juice can is 1 liter and 50 ml , what is the capacity in milliliter? _____
b. Write the prime numbers less than 7

6. Find the common factors of 12 and 20 , then find the G.C.F

7. a. Round the number 5,266,747,023 to the nearest milliard

- b. Write the number in the standard form 2 milliard , 45 million , and 250

3

Giza Governorate



Mathematics Inspection

1. Choose the correct answer:

1. The value of the digit 7 in 476,315 is _____

A.7

B. 700

C. 7,000

D. 70,000

2. The area of the square whose side length is 5 cm. = _____ cm^2

A. 20

B. 25

C.15

D. 30

3. If $Y + 300 = 321$, then Y = _____

A. 321

B. 300

C. 31

D. 21

4. 6,235,678  6,235,508

A.=

B.<

C.>

D.otherwise

5. The additive identity element is _____

A. 0

B. 1

C. 2

D. 3

6. A week and 5 days = _____ days

A. 7

B. 13

C. 12

D. 17

7. The smallest prime number is _____

A. 0

B. 1

C. 2

D. 3

8. 5 Liters = _____ milliliters

A. 5,000

B. 500

C. 50

D. 5

9. $26 \div 4 = 6 \text{ R } \underline{\hspace{2cm}}$

A. 1

B. 2

C. 3

D. 4

2. Answer the following questions:

1. Apply the properties of multiplication to solve: $2 \times 5 \times 7$

2. A rectangle of length 8 cm and width 2 cm . Find the perimeter.

3. Find: $8,638 - 2,516 = \underline{\hspace{2cm}}$

4. $6,438 \approx \underline{\hspace{2cm}}$ [to the nearest hundred].

5. Noha has 6,234 pounds , her father gave her 2,345 pounds .

How much money does she have now?

6. Find the G.C.F of 10 and 15

7. List the following masses from least to greatest:

24,000 g , 5 Kg , 21,000 g , 13 Kg

The order is: , , ,

4

Giza Governorate



6th October Directorate
Mathematics Inspection

1. Choose the correct answer:

1. In $36 \div 5 = 7 \text{ R } 1$, the dividend is

A. 7

B. 5

C. 36

D. 1

2. If the side length of a square is 4 cm , then its area is cm^2

A. 16

B. 8

C. 9

D. 10

3. $13 + 0 = 13$ show the property

A. associative

B. commutative

C. additive identity

D. none of the previous

4. The value of the digit 7 in the number 172,180,603 is

A. 700

B. 70,000,000

C. 70,000

D. 700,000,000

5. 2 days = hours

A. 12

B. 24

C. 36

D. 48

2. choose the correct answer:

1. Rounding the number 235,621 to the nearest thousand is

A. 235,000

B. 240,000

C. 236,000

D. 6,000

2. If $850 \times m = 850$, then $m =$ _____

- A. 1 B. 850 C. 2 D. 0

3. 18 is _____ times the number 3

- A. 7 B. 6 C. 5 D. 3

4. The prime number has _____ factors

- A. 2 B. 1 C. 3 D. 0

3. Answer the following questions:

1. a. If the opposite model represents the product of 5×23 , then $X =$ _____

	20	3
5	100	X

b. A rectangle of length 7 cm and width 3 cm, find its perimeter.

2. a. Find the product of: 234×2

b. Use order of operation to find
 $[8 + 2] \div 2 =$ _____

3. a. In the opposite bar model, the value of y is _____

b. Find the G.C.F of 12 and 10

	250
y	150

c. Ahmed has 84 stickers, he distributed them equally among 6 of his friends, What is the share of each one?

5

Alexandria Governorate



Montaza 1 Educational Zone
Mathe's Supervision

1. Choose the correct answer:

1. The number thirty-six thousand, one hundred twenty-seven in standard form is _____

- A. 36,000,127 B. 360,127 C. 36,127 D. 12,736,000

2. The number $36,123 \approx 36,120$ to nearest _____

- A. ten. B. hundred. C. thousand. D. ten thousands.

3. By using the opposite bar model, the value of d is _____

- A. 3 B. 3,310 C. 11 D. 3,000

	7,620
4,310	d

4. $845,321$ _____ $143,285$

- A. > B. < C. =

5. One of the common multiples of 3 , 4 is _____

- A. 4 B. 3 C. 12 D. 7

6. The value of C in the equation $C = 4 \times 7$ is _____

- A. 11 B. 28 C. 3 D. 21

7. $9:30 - 2:15 =$ _____

- A. 11:15 B. 22 C. 11:45 D. 7:15

8. 8 Kilograms = _____ grams

- A. 80,000 B. 8,000 C. 800 D. 80

9. A square of perimeter 36 cm , then its side length = _____ cm.

- A. 12 B. 4 C. 9 D. 6

2. Answer the following questions:

1. Find the result using the standard algorithm for: $\begin{array}{r} 326 \\ \times 3 \\ \hline \end{array}$

$$\begin{array}{r} 326 \\ \times 3 \\ \hline \end{array}$$

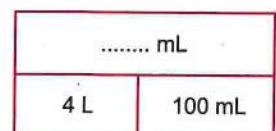
2. Use the associative property to find the result of: $3 \times 4 \times 25$

3. Write the greatest common factor (G.C.F) of the numbers 21 , 35

4. An organization distributes 84 books among 6 classrooms. How many books does each classroom receive?

5. A group of 38 people travels by bus , and each ticket costs 30 L.E. What is the total cost of the tickets for all travelers?

6. Find the missing number in the bar model



7. A rectangular piece of land with 15 meters long and 6 meters wide.

Find its area.

6

El-Kalyoubia Governorate



Maths Supervision

1. Choose the correct answer:

1. The value of the digit 8 in the number 618,409 is _____.
 A. 800 B. 8,000 C. 80,000 D. 800,000
2. Rounding the number 35,084 to the nearest thousand is _____.
 A. 3,000 B. 30,000 C. 35,000 D. 36,000
3. $2 \times 6 - 3 \div 3 =$ _____.
 A. 2 B. 4 C. 6 D. 11
4. $18 + 171 = 171 +$ _____.
 A. 18 B. 171 C. 198 D. 189
5. $3,247 + 2,374 =$ _____.
 A. 5,261 B. 5,621 C. 5,511 D. 5,521
6. The quotient of: $7,200 \div 8$ is _____.
 A. 900 B. 90 C. 800 D. 80
7. A square with a side length of 6 cm , then its perimeter is _____ cm.
 A. 24 B. 36 C. 18 D. 12
8. $3 : 25 + 35$ minutes = _____.
 A. 3 : 00 B. 3 : 50 C. 4 : 55 D. 4 : 00
9. 120 seconds = _____ minutes
 A. 2 B. 3 C. 3.5 D. 2.5

2. Answer the following questions:

1. Using the area model , find the product of: 14×5

2. The number of boys and girls in a school is 4,354 , the number of girls in this school is 2,150. What is the number of boys?

Equation: _____

Solution: _____

Bar model

3. What is the number which its prime factors are: 2 , 2 and 3?

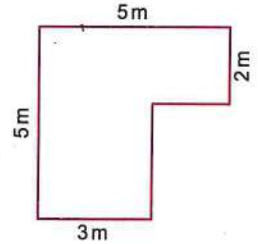
4. Find the [G.C.F] of 16 and 20

5. Write an equation represents "a number is 4 times the number 3".

6. Find the missing numbers.

6,360 mL	
.... L	 mL

7. Find the area of the opposite figure.



7

El-Sharkia Governorate



Maths Supervision

1. Choose the Correct answer:

1. If the width of rectangle is 4 m and its length is 6 m , then its area = _____ m^2

A. 60

B. 24

C. 10

D. 30

2. $4 \times 300 =$ _____

A. 1,200

B. 120,000

C. 12,000

D. 120

3. The place value of digit 1 in the number : 7,213,456 is _____

A. million

B. ten thousands

C. tens

D. thousands

4. 6 km = _____

A. 6 mm

B. 600 cm

C. 6 cm

D. 6,000 m

5. The additive identity is _____

A. 1

B. 2

C. 0

D. 10

6. $5 \times 12 = 12 \times 5$ is called the _____ property.

A. associative

B. commutative

C. identity

D. distributive

7. 3 hours = _____ minutes

A. 60

B. 120

C. 180

D. 30

8. The value of the digit 7 in the number : 53,476,952 is _____

A. 70

B. 70,000

C. 7,000,000

D. 700,000

9. Milliard is the smallest _____ digit number.

A. 5

B. 7

C. 10

D. 6

2. Answer the following questions :

10. Find the value of : $5 + 8 \div 2$

11. Find the G.C.F of the two numbers : 20 and 30

12. Find the area of the square whose side length 4 cm

13. Find : $8,973 - 3,468 =$ _____

14. Sama bought 12 kg of apples for 9 L.E. each kilogram. Find the money which she paid.

15. Find : $968 \div 2 =$ _____

16. Find : $437 \times 3 =$ _____

8

El-Monofia Governorate



Berket Elsaba Directorate
Mathematics supervision

1. Choose the correct answer:

1. The common multiple of all numbers is _____

- A. 0 B. 1 C. 2 D. 3

2. If $348 + b = 815$, then the value of b = _____

- A. 1,163 B. 533 C. 467 D. 3,611

3. $6 + 2 \times 3 =$ _____

- A. 24 B. 12 C. 11 D. 0

4. The value of the digit 7 in the number : 37,215,643 is _____

- A. millions. B. hundred thousands
C. 700,000 D. 7,000,000

5. 13 L = _____ mL

- A. 13,000 B. 1,300 C. 130 D. 13

6. Rounding the number 72,315,486 to the nearest hundred thousand is _____

- A. 72,000,000 B. 72,300,000 C. 73,000,000 D. 72,400,000

7. The perimeter of square whose side length 6 cm is _____ cm.

- A. 12 B. 36 C. 24 D. 10

8. The multiplicative identity is _____

- A. 0 B. 1 C. 2 D. 3

9. A week and 3 days = _____ days

- A. 7 B. 8 C. 9 D. 10

2. Answer the following questions:

1. Arrange the following numbers in an ascending order :

24,617 , 345,618 , 42,176 , 543,618

The order is : _____ , _____ , _____ , _____

2. Write the factors of the numbers 10 and 15 , then find the greatest common factor [G.C.F].

Factors of 10 are _____

Factors of 15 are _____

Common Factors are _____

G.C.F = _____

3. Hossam sleeps 8 hours each day , How many minutes does he sleep each day?

4. Find the area and the perimeter of the rectangle whose length 8 cm and its width 6 cm.

5. Find the product of $634 \times 6 =$ _____

6. A bridge of ants consists of 142 ants and another bridge consists of 164 ants. How many ants are their in two bridges together?

7. Find the quotient of : $306 \div 6 =$ _____

9

El-Gharbia Governorate

EL Gharbia Educational
Central Mathematics Supervision

1. Choose the correct answer:

- 1.1 week and 2 days = _____ days.

A. 7

B. 9

C. 12

D. 3

2. In the equation $6 \times b = 42$, then $b =$ _____

A. 7

B. 8

C. 5

D. 4

3. Round the number 4,865 $\approx$ _____ [to the nearest hundred]

A. 4,860

B. 8

C. 4,800

D. 4,900

4. The common multiple of all numbers is _____

A. 1

B. 2

C. 3

D. 0

5. $12 + 8 \div 2 =$ _____

A. 5

B. 14

C. 16

D. 10

6. A square whose side length 3 cm , then its area = _____ cm^2

A. 12

B. 6

C. 9

D. 4

7. 2,024 m = _____ km , 24 m

A. 2

B. 20

C. 24

D. 2,025

8. $80 \times 30 =$ _____ hundreds

A. 24

B. 240

C. 2,400

D. 240,000

9. The value of the digit 6 in the number 3,625,380 is _____

- A. 6 B. 600,000 C. 60 D. 600

2. Answer the following questions :

1. a. A bridge of ants consists of 172 ants and another bridge

Consists of 128 ants. How many ants are there in the two bridges together?

b. From the opposite bar model.

Find the value of x.

683	
x	245

c. Apply the properties of multiplication to find :

$$2 \times 6 \times 5$$

2. a. A car filled with 75 liters of petrol. How many milliliters would that be?

b. Find the greatest common factor [G.C.F] of 12 and 18

Factors of 12 = _____

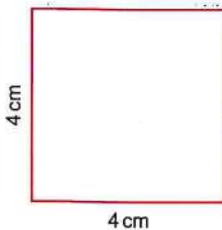
Factors of 18 = _____

Common Factors = _____

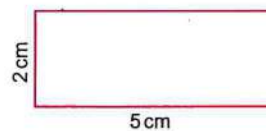
G.C.F : _____

3. a. Find the perimeter of each of the following :

[1]



[2]



b. Find the result of each of the following :

[1] $235 \times 4 =$ _____

[2] $425 \div 5 =$ _____

10

El-Dakahlia Governorate



Math Supervision

1. a. Choose the correct answer: [Calculator is not allowed]

1. $50 \times 300 =$ _____ tens

- A. 15,000 B. 1,500 C. 150 D. 15

2. Which of the following is a prime number?

- A. 9 B. 10 C. 13 D. 15

3. 7m , 6 cm = _____ cm.

- A. 76 B. 7,006 C. 706 D. 700,600

b. The class teacher distributed a box of 84 colored pencils among 4 students equally.
How many pencils will each student get?

2. a. Choose the correct answer:

1. $6 + 24 \div 3 - 5 =$ _____

- A. 5 B. 9 C. 14 D. 28

2. 1 day and 5 hours = _____ hours

- A. 29 B. 65 C. 15 D. 35

3. 32 is multiple of _____

- A. 8 B. 3 C. 6 D. 7

b. Amira bought 7 kg of apples for 25 L.E. each , find the money which she paid.

3. a. A garden in the form of a square with side length 7 meters. Find the area of the garden.

b. Choose the correct answer:

1. A rectangle with length 7 cm , width 3 cm , then its perimeter = _____ cm.

- A. 10 B. 20 C. 21 D. 73

2. $9,632 \approx$ _____ to nearest hundred

- A. 9,600 B. 9,000 C. 10,600 D. 10,000

3. If $20 \div 6 = 3 \text{ R } 2$, then the divisor is _____

- A. 20 B. 6 C. 3 D. 2

4. a. In the opposite model:

Find the value of variable M _____

M	
2,450	1,630

b. Find G.C.F of 18 and 24.

5. a. Omar ate 8 figs in the morning. His brother ate 3 times as many as Omar ate.

How many figs did his brother eat?

- b. A road is 675 km long and a car has traveled 235 km. What is the remaining distance of the road?

11**Ismailia Governorate**Ismailia Educational Zone
Mathematics Supervision**1. Choose the correct answer:**

1. The value of the digit 6 in the number 6,214,300 is _____.
 A. 600 B. 6,000 C. 60,000 D. 6,000,000
2. The additive neutral element is _____.
 A. 0 B. 1 C. 2 D. 5
3. 800 cm = _____ meters
 A. 6 B. 7 C. 8 D. 5
4. The perimeter of a square with a side length of 4 cm = _____ cm.
 A. 61 B. 20 C. 15 D. 16
5. $7 \times 3 = 3 \times 7$ is called the property of _____.
 A. associative. B. commutative. C. distributive. D. multiplicative identity.
6. 2 liters = _____ milliliters
 A. 2,000 B. 200 C. 2 D. 100
7. $600 \div 2 =$ _____
 A. 300 B. 400 C. 52 D. 30
8. 3 times the number 5 is _____.
 A. 20 B. 15 C. 25 D. 30
9. $6 \times 30 =$ _____
 A. 18 B. 40 C. 180 D. 680

2. Answer the following questions:

10. Arrange in a descending order:

23,125 , 20,137 , 21,142 , 37,123

The order is : _____ , _____ , _____ , _____

11. Khaled bought 2 kilograms of apples and 500 grams of strawberries. What is the mass of the apples and strawberries in grams?

12. Find the value of x in the following bar graph:

500	
150	x

13. Find the prime numbers less than 5

14. A rectangular piece of land with 7 meters long and 3 meters wide. Calculate the area of the piece of land.

15. Mahmoud has 12 pieces of candy. He ate 4 pieces of them and distributed the rest equally between 2 of his friends. How many pieces will each of his friends take?

16. Write an even number such that it is a multiple of 5 and 3

12

Port Said Governorate


 Directorate of Education
 Mathematics Inspector

1. Choose the correct answer:

1. If $M \times 4 = 32$, then $M =$ _____

A. 6

B. 7

C. 5

D. 8

2. $81 + 74 = 74 + 81$, the name of property is _____

A. commutative.

B. distributive.

C. associative.

D. additive identity.

3. 9,300 gm. _____ 9 kg.

A. <

B. =

C. >

D. otherwise

4. The area of a square with side length of 6 cm = _____ cm^2

A. 25

B. 20

C. 36

D. 10

5. If $640 - A = 340$, then $A =$ _____

A. 300

B. 900

C. 100

D. 200

6. 7 m, 50 cm = _____ cm.

A. 570

B. 507

C. 750

D. 7500

7. _____ is a multiple of 3.

A. 10

B. 15

C. 23

D. 50

8. The smallest number formed from 7 digits is _____

A. 999,999

B. 100,000

C. 1,111,111

D. 1,000,000

9. Rounding the number 65,432 to the nearest thousand is _____

A. 70,000

B. 65,430

C. 65,400

D. 65,000

2. Answer the following questions:

1. Find the product by using area model: $512 \times 3 =$ _____

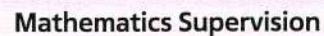
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2. $240 \div 4 =$ _____

3. Find the G.C.F for 4, 12

- The order is: _____, _____, _____

Damietta Governorate



1. Choose the correct answer:

6. 10 times the number 450 is _____

- 2.** 1. A water tank contains 12 liters of water , How many milliliters does the tank contain?

2. A squared room its side length is 5 m , Find the area of the room.

3. Find the product of 184×4

3. 1. By using this bar model of addition , write the equation then find the value of y

y	
900	100

2. Find the greatest common factor of 12 and 18.

4. 1. Use the order of operations to find the value of : $8 \times 2 + 8 - 3$
- _____

2. Find the quotient of $785 \div 5$

14 Kafr El-Sheikh Governorate



Mathematics Supervision

1. Choose the correct answer:

1. The value of 7 in 576,324 is _____

- A. 7 B. 700 C. 7,000 D. 70,000

2. The number 6 million , 6 thousand and 6 is _____

- A. 666 B. 60,606 C. 6,006,006 D. 666,000

3. A week and 4 days = _____ days

- A. 7 B. 9 C. 11 D. 12

4. The additive identity added to 5 equals _____

- A. 5 B. 0 C. 9 D. 1

5. The only even prime number is _____

- A. 0 B. 1 C. 2 D. 5

6. $888 \div \text{_____} = 444$

- A. 2 B. 22 C. 222 D. 20

7. $2 + 2 \times 4 = \text{_____}$

- A. 16 B. 10 C. 6 D. 12

8. 12 is _____ times the number 4

- A. 3 B. 4 C. 5 D. 6

9. $13 + 7 = 7 + 13$ is called the _____ property.

- A. associative B. commutative C. additive identity D. distributive

2. Answer the following questions:1. $5,673 \approx$ _____ [To nearest thousand]2. $60,000 - 23,542 =$ _____

3. Find the perimeter of a rectangle whose length 5 cm and width 3 cm

4. In the opposite bar model the value of X = _____

5. The factors of 10 are : _____

6. Find G.C.F of 4 and 6

X	
2,567	2,538

7. Salma bought 5 books , if the price of each book is 500 pounds.
How much money did she pay ?

15**El-Beheira Governorate**
**El-Beheira Educational Zone
Mathematics Supervision**
1. Choose the correct answer :

1. The value of the digit 5 in the number 5,328,459 is _____

A. 5,000,000 B. 50,000,000 C. 5,000 D. 50,000

2. The smallest number formed from 6 , 2 , 0 , 5 , 7 , 9 is _____

A. 976,520 B. 976,502 C. 250,679 D. 205,679

3. If $88 \div 4 = 22$, then the divisor is _____

A. 4 B. 88 C. 22 D. 1

4. The common factor of all number is _____

A. 0 B. 1 C. 2 D. 3

5. $12 + 37 = 37 + 12$ is called _____ property

A. commutative B. associative C. additive identity D. distribution

6. The smallest prime number is _____

A. 0 B. 1 C. 2 D. 3

7. 5 km = _____ m

A. 5,000 B. 50,000 C. 500 D. 50

8. The perimeter of the square = side length $\times$ _____

A. 4 B. 2 C. 3 D. 5

9. One hour and half hour = _____ minutes.

A. 150 B. 90 C. 60 D. 120

2. Answer the following questions :

$$\begin{array}{r} 10. \quad 5,264,087 \\ + 1,735,913 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 9,546,790 \\ - 6,213,457 \\ \hline \end{array}$$

12. Find all factors of the numbers 6 and 8 , then find G.C.F.

Factors of 6 are _____

Factors of 8 are _____

G.C.F. is _____

13. Ali bought 12 pens of 8 pounds each , how much did he pay ?

What Ali paid = _____

14. Use the order of operations to solve : $[16 + 4] \div 2$

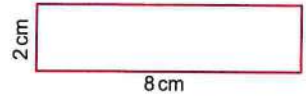
15. Find the area of the square :

The area = _____



16. Find the perimeter of the rectangle

The perimeter = _____

**16****El-Fayoum Governorate**
**Directorate of Education
Supervision of Mathematics**
1. Choose the correct answer:

1. The perimeter of the square = side length $\times$ _____

A. 2

B. 1

C. 3

D. 4

2. The smallest 7-digit number is _____

A. 1,000,000

B. 123,456,7

C. 102,345,6

D. 9,999,999

3. $3,522 + 5,076 =$ _____

A. 8,558

B. 8,598

C. 8,658

D. 8,814

4. Perimeter of a rectangle with length 9 cm and width 6 cm is _____ cm.

A. 45

B. 48

C. 54

D. 30

5. 35 hundreds = _____

A. 350

B. 3,500

C. 5,300

D. 35,000

6. The divisor in $36 \div 4 = 9$ is _____

A. 9

B. 5

C. 9

D. 4

7. 2 hours = _____ minutes

A. 90

B. 120

C. 60

D. 180

8. The additive identity element is _____

A. 0

B. 1

C. 3

D. 4

9. 7 meters = _____ cm.

A. 6,000

B. 7,000

C. 700

D. 7

2. Answer the following questions

1. Find G.C.F of 6 and 8.

2. Jasmine saves 44 L.E. each week , How much money will she save in 3 weeks?

3. Find: $246 \div 2 =$ _____

4. $61 \times 5 =$ _____

5. Write the numbers in an ascending order:

8,092,561 , 9,345,355 , 7,234,345 , 8,029,234

The order is : _____ , _____ , _____ , _____

6. Three milliard , eight hundred thirty five millions , eleven thousands , ninety four
[in standard form]

7. The side length of a square is 6 cm, find its area.

17

El-Menia Governorate



Samalot Educational Directorate
Supervision of Mathematics

1. Choose the correct answer:

1. A rectangle its length is 6 cm and its width is 5 cm then its area = _____ cm^2

A. 11

B. 30

C. 22

D. 32

2. The digit in hundred thousands place in the number 927,357 is _____

A. 5

B. 3

C. 9

D. 2

3. 3 times the number 7 is _____

A. 7

B. 14

C. 21

D. 28

4. $25 + 20 = 20 + 25$ is called the _____ property.

A. associative

B. commutative

C. additive identity

D. distributive

5. Which number is a factor of the number 40 is _____

A. 6

B. 7

C. 5

D. 3

6. 50 km = _____ m

A. 50,000

B. 5,000

C. 500

D. 50

7. The smallest prime number is _____

A. 2

B. 3

C. 5

D. 7

8. 1 day and 5 hours = _____ hours.

A. 29

B. 35

C. 65

D. 15

9. $490 \div 7 =$ _____

A. 9

B. 70

C. 700

D. 7,000

2. Answer the following questions :

1. Find the factors of 8 and 12 , then find the G.C.F.

2. The standard form of: $7,000 + 600 + 20 + 9$ is _____

3. List 3 multiples of 5 : _____ , _____ , _____

4. Arrange in an ascending order : 364,000 , 26,450 , 25,682

The order is : _____ < _____ < _____

5. A square plot of land with a side length of 5 m. Find its perimeter.

The perimeter = _____

6. Anas bought a trousers pants for 250 L.E. and a T-shirt for 190 L.E.,

How much did Anas pay ?

Anas paid = _____

7. A train has 9 cars, each car has 75 seats, find the total number of seats.

The total = _____

18

Qena Governorate



Qena Directorate of Education
Math General Supervision

1. Choose the correct answer :

1. The value of the digit 5 in the number 8,135,712 is : _____

A. 50

B. 500

C. 5,000

D. 50,000

2. $13 + 7 = 7 + 13$ is called the _____ property.

A. associative

B. commutative

C. additive Identity

D. distributive

3. 12 L = _____ mL

A. 12

B. 1,200

C. 12,000

D. 120,000

4. Perimeter of a square of side length 3 cm = _____ cm.

A. 15

B. 12

C. 6

D. 9

5. 10 times the number 43 = _____

A. 43,000

B. 4,300

C. 430

D. 430,000

6. The only even prime number is _____

A. 2

B. 3

C. 4

D. 5

7. The common factor of all numbers is _____

- A. 0 B. 1 C. 2 D. 3

8. $15 - 3 \times 4 =$ _____

- A. 48 B. 3 C. 8 D. 20

9. $5,990 \approx$ _____ [Round to the nearest thousand]

- A. 5,100 B. 5,900 C. 6,000 D. 5,000

2. Answer the following questions :

1. Find the greatest common factor [G.C.F] of 12 and 18 :

2. A rectangle has a length of 5 cm and a width of 4 cm. Find its perimeter and area.

The perimeter = _____

The area = _____

3. From the opposite area model:

The product is : _____

	70	5
3	210	15

4. Find the quotient: $320 \div 4 =$ _____

5. In the equation: $b - 1,000 = 3,000$, the value of b = _____

6. Ali bought a laptop for 7,250 L.E. and a mobile phone for 4,000 L.E.

How much did he pay in total?

7. Mazen bought 4 books , if the price of each book is 87 pounds.

How much money did he pay?

19

Aswan Governorate



Kom ombo, Darow and Naser Nuba

1. Choose the correct answer:

1. $2,700 \div 3 =$ _____

- A. 9 B. 90 C. 900 D. 9,000

2. The side length of a square is 4 cm , then its perimeter is _____

- A. 5 cm. B. 4 cm. C. 15 cm. D. 16 cm.

3. $14 + 7 = 7 + 14$ is called the _____ property.

- A. associative B. commutative C. additive identity D. otherwise

4. $15 - 3 \times 4 =$ _____

- A. 3 B. 8 C. 20 D. 48

5. 1 day and 3 hours = _____ hours.

- A. 15 B. 35 C. 27 D. 65

6. 45 is _____ times the number 5

- A. 6 B. 9 C. 5 D. 40

7. The value of the digit 8 in the number 286,354 is _____

- A. 8 B. 80 C. 800 D. 80,000

8. A rectangle its length is 6 m , its width is 3 m , then its area = _____ m^2

- A. 9 B. 18 C. 36 D. 12

9. In the equation: $5 \times a = 30$, the value of a = _____

- A. 6 B. 4 C. 8 D. 5

2. Answer the following questions:

1. By using the opposite bar model: Find the value of the variable n in the equation: $n - 30 = 15$

n = _____

2. List all multiples of 6 up to 30.

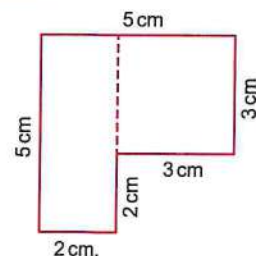
3. Ahmed bought 10 pens , if the price of a pen is 4 pounds. What is the price of all pens?

4. Find the greatest common factor (G.C.F) of: 10 and 15.

5. Find the product of: 352×6

6. Find the quotient of: $246 \div 6$

7. Calculate the perimeter of the opposite shape



20

South Sinai Governorate



**Directorate of Educational
El-Tur Educational Zone**

1. Choose the correct answer:

1. 61 tens = _____

- A. 6,100 B. 610 C. 61,000 D. 61

2. 5,000 grams = _____ Kilograms
A. 5 B. 500 C. 50 D. 50,000
3. The value of the digit 7 in the number 7,313,500 is _____
A. 70 B. 700 C. 7,000 D. 7,000,000
4. The number 81,483 $\approx$ _____ [to the nearest hundred].
A. 81,400 B. 81,490 C. 81,500 D. 81,480
5. 4 times the number 6 is _____
A. 10 B. 25 C. 24 D. 18
6. The value of A in the equation $12 \times A = 60$ is _____
A. 5 B. 4 C. 72 D. 720
7. 8 liters 2,000 milliliters.
A. < B. = C. > D. $\leq$
8. If $60 \div 4 = 15$, then the divisor is _____
A. 60 B. 15 C. 4 D. 30
9. 4 weeks = _____ days.
A. 28 B. 48 C. 36 D. 11

2. Answer the following questions:

1. Omar saved 825 pounds, he spent 317 pounds. Find the remainder with him.

2. A square with a side length of 6 cm, find its area.

3. Find the result : $45 \div 9 + 5 =$ _____

4. Find the greatest common factor [G.C.F] of 14 and 7.

5. A rectangle of length 8 meters and width 7 meters, find its perimeter.

6. Find the product of : $8 \times 300 =$ _____

7. The number of girls in a school is 2,154 and the number of boys in the same school is 3,456. Calculate the number of school students.

Mathematics

By a group of supervisors

GUIDE ANSWERS

FREE PART

2



FIRST TERM

4th
PRIMARY



Answers of Revision

Revision 1

1. a. 51,330 b. 300
c. 16 d. Ten Thousands
e. 38,502

2. a. A b. A c. D
d. B e. B

3. 43,692 , 56,210 , 171,000 ,
506,021 , 650,201

4. a. 3,182 b. 68,921
c. 27,000 d. 49

Revision 2

1. a. D b. A c. B
d. A e. A

2. a. 863,507
b. Hundred Thousands c. 9
d. 107,035 e. 17

3. The number of cans in a week
 $= 800 \times 7 = 5,600$ cans

4. The greatest number : 964,310
The smallest number : 103,469

Revision 3

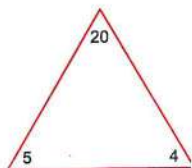
1. a. 32 b. 210 c. 38
d. 1,114 e. 20,567

2. a. C b. C c. D
d. B e. B

3. 8×1 , 3×10 , 6×9 ,
 7×8 , 5×12

4. The number of bags $= 72 \div 8$
 $= 9$ bags

5. • $4 \times 5 = 20$
• $5 \times 4 = 20$
• $20 \div 4 = 5$
• $20 \div 5 = 4$



ANSWERS OF

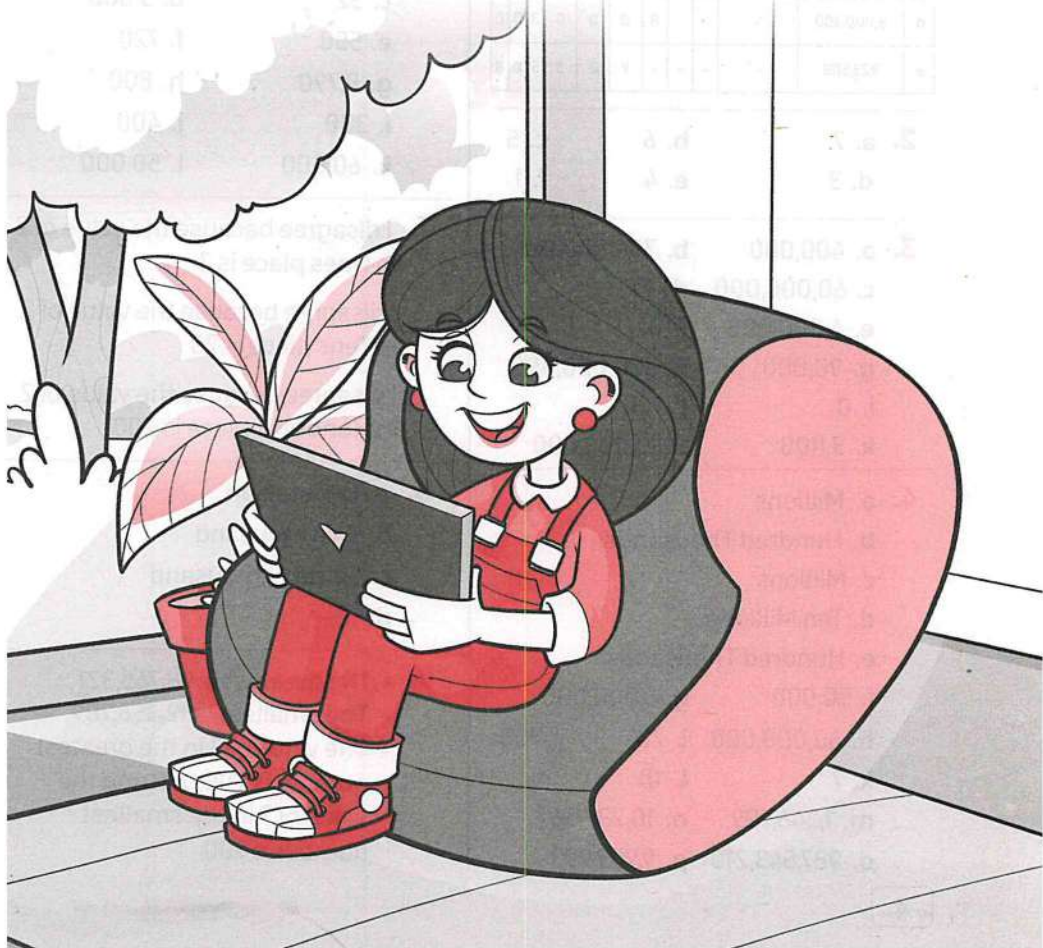
UNIT

1

Place Value

► **Concept 1** : Reinforcing Place Value

► **Concept 2** : Using Place Value



Concept 1

Reinforcing Place Value

Exercise 1

1.

Number	Milliards			Millions			Thousands			Ones		
	O	H	T	O	H	T	O	H	T	O	H	T
Ex. 5,604,453,987	5	6	0	4	4	5	3	9	8	7		
a. 8,714,326,518	8	7	1	4	3	2	6	5	1	8		
b. 753,009,300	-	7	5	3	0	0	9	3	0	0		
c. 7,354,621	-	-	-	7	3	5	4	6	2	1		
d. 8,000,300	-	-	-	8	0	0	0	3	0	0		
e. 923,508	-	-	-	-	9	2	3	5	0	8		

2. a. 7 b. 6 c. 5
d. 3 e. 4 f. 1

3. a. 400,000 b. 700,000,000
c. 60,000,000 d. 10
e. 4,000,000 f. 0
g. 90,000 h. 300,000,000
i. 0 j. 900
k. 3,000 l. 60,000,000

4. a. Millions
b. Hundred Thousands
c. Millions
d. Ten Millions
e. Hundred Thousands
f. 50,000 g. 6,000,000
h. 60,000,000 i. 20 j. 700
k. 7 l. 10
m. 1,346,789 n. 10,234,567
o. 987,543,210 p. 9,999,999

5. a. 75,421,392
b. 2,500,422,300
c. 701,007,700
d. 2,500,422
e. 9,009,009,009
f. 27,027,000
g. 16,000,000,016

6. a. 56 b. 2,800
c. 32 d. 3,000
e. 550 f. 720
g. 8,790 h. 800
i. 300 j. 400
k. 60,000 l. 50,000

7. I disagree because the value of 2 in Ones place is 2

I disagree because the value of 2 in Tens place is 20

I disagree because the value of 2 in Hundreds place is 200

8. a. One million
b. Two thousand
c. Seventy thousand
d. 10

9. • The greatest is 98,765,321
• The smallest is 12,356,789
• The value of 7 in the greatest number is 700,000 and the value of 7 in the smallest number is 700

Answers of multiple choice questions

- | | | |
|-------|-------|-------|
| 1. C | 2. D | 3. D |
| 4. D | 5. C | 6. C |
| 7. D | 8. C | 9. A |
| 10. C | 11. A | 12. C |
| 13. D | 14. B | 15. B |

Exercise 2**1.**

- | | |
|------------------|----------------|
| a. 409 | b. 34,097,000 |
| c. 3,214,936 | d. 527,900,640 |
| e. 3,402,000,017 | f. 27,422 |
| g. 70,126,450 | |

2.

- a. $1,000,000 + 700,000 + 50,000 + 6,000 + 300$
- b. $50,000,000 + 4,000,000 + 600,000 + 30,000 + 2,000 + 400 + 5$
- c. $700,000,000 + 1,000,000 + 400,000 + 60,000 + 2,000 + 50 + 1$
- d. $9,000,000,000 + 900,000,000 + 80,000,000 + 9,000,000 + 700,000 + 90,000 + 1,000 + 900 + 80 + 5$
- e. $30,000,000 + 5,000,000 + 10,000 + 7,000 + 200 + 30$
- f. $2,000,000,000 + 400,000,000 + 20,000,000 + 300,000 + 50,000 + 2,000 + 100 + 3$

3.

- a. Three million , five hundred sixty-two thousand , five hundred four.
- b. Fifty-four million , two hundred thirteen thousand , four hundred fifty.
- c. Five milliard , four hundred eight million , nine hundred twenty-one thousand , two.
- d. Seven hundred sixty thousand , twenty-nine.
- e. Five milliard , seven million , nine hundred three thousand , twenty.

4.

- | | |
|------------------|------------------|
| a. 3,021,509 | b. 1,024,000 |
| c. 6,221,000 | d. 8,555,666 |
| e. 5,000,005,005 | f. 4,025,067,059 |
| g. 3,003,003 | h. 5,650,016 |
| i. 5,023,640 | j. 742,372 |
| k. 803,504 | l. 6,543,210 |
| m. 1,235,789 | n. 600 |
| o. 3,008,433 | |

5.

- a. $100,000 + 70,000 + 300 + 90 + 2$
- b. $100,000 + 5,000 + 200 + 8$
- c. $600,000 + 1,000 + 200 + 7$
- d. $2,000,000 + 200,000 + 70,000 + 7,000 + 100 + 90 + 1$

e. $10,000,000 + 7,000,000 + 200,000$
 $+ 30,000 + 10 + 4$

f. $3,000,000,000 + 100,000,000$
 $+ 30,000,000 + 7,000,000$
 $+ 600,000 + 10,000 + 9,000 + 80 + 8$

6.

a. $6,000,000,000 + 100,000,000$
 $+ 20,000,000 + 4,000,000 + 30,000$
 $+ 400 + 20$

Milliards			Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O	H	T
6	1	2	4	0	3	0	4	2	0		

b. $5,400,159,024$
 $5,000,000,000 + 400,000,000$
 $+ 100,000 + 50,000 + 9,000 + 20 + 4$

c. $7,050,043,509$

Milliards			Millions			Thousands			Ones		
O	H	T	O	H	T	O	H	T	O	H	T
7	0	5	0	0	4	3	5	0	9		

7.

a. $[4 \times 1,000,000] + [4 \times 10,000]$
 $+ [4 \times 100]$

b. $2,005,607,927$

c. $9,053,769$

d. $9,000,000,000 + 200,000,000$
 $+ 10,000,000 + 30,000 + 1,000$
 $+ 400 + 50 + 8$

8. $165,640$

9. $987,654,321$ and $986,654,321$
 [Answers may vary]

Answers of multiple choice questions

1. B **2.** C **3.** A

4. B **5.** A **6.** D

7. A **8.** D **9.** B

10. C **11.** C **12.** B

13. B

Concept 2

Using Place Value

Exercise 3

1.

- | | | | |
|------|------|------|------|
| a. < | b. = | c. > | d. > |
| e. < | f. > | g. < | h. < |
| i. < | j. < | k. > | l. > |

2.

- | | | | |
|------|------|------|------|
| a. < | b. > | c. = | d. < |
| e. < | f. < | g. > | h. < |
| i. > | j. < | | |

3.

- | | |
|--------------|-----------|
| a. 1,025,789 | b. 2,035 |
| c. 2,034,689 | d. 98,520 |
| e. 743,210 | |

4.

- | | | | |
|------|------|------|------|
| a. 0 | b. 2 | c. 9 | d. 0 |
| e. 9 | f. 8 | g. 0 | h. 0 |
| i. 5 | j. 0 | k. 0 | l. 9 |

5. [One of the answers is]

- | | |
|--|--------------|
| a. 793,820 | b. 9,933,001 |
| c. 22,427,400 | |
| d. $2,000,000,000 + 400,000,000$
$+ 40,000,000 + 5,000,000$
$+ 200,000 + 30,000$
$+ 2,000 + 100 + 90 + 7$ | |

6.

the error $\textcircled{5} > \textcircled{2}$
 $24,1\textcircled{5} 2,614 < 24,1\textcircled{2} 5,614$
the correct
 $24,152,614 > 24,125,614$

7. $12,495 < 13,495$

Answers of multiple choice questions

- | | | |
|-------|-------|-------|
| 1. C | 2. A | 3. A |
| 4. A | 5. C | 6. A |
| 7. C | 8. B | 9. A |
| 10. B | 11. C | 12. C |
| 13. A | 14. C | |

Exercise 4

1.

- a. 7,534,786 , 8,092,561 , 8,650,336 , 9,208,111
- b. 988,423 , 1,282,756 , 3,012,427 , 3,105,338
- c. 43,000,549 , 403,000,456 , 430,000,459 , 430,549,000

2.

- a. 540,312 , 504,321 , 450,321 , 342,150 , 321,405
- b. 6,562,942,735 , 6,562,942,375 , 6,942,735 , 6,942,537
- c. 4,273,653 , 4,237,690 , 4,237,651 , 495,627

3. 3,110,099,493 , 3,010,001,034 , 3,001,323,391 , 3,000,990,992

4.

- a. 599,310 , 604,320 , 654,301 , 654,310 , 654,311
- b. 3,405,003 , 3,450,003 , 3,450,030 , 3,453,000

5.

- a. 3,000,000,000 , 2,400,700,000
 , 2,040,007,000 , 2,004,700,000
- b. 6,045,017,090 , 6,035,060,900
 , 6,025,060,990 , 5,045,007,090
 , 5,041,007,090

6.

- a. • 461,014
 • 6,400,042
 • $[4 \times 1,000,000,000] + [4 \times 100,000] + [6 \times 10]$
 • Four milliard , six hundred thousand , four.
 • Four milliard , six hundred thousand , forty
- b. • Nine million , seven hundred thirty-one thousand , seventy
 • $9,000,000 + 700,000 + 40,000 + 50$
 • 90,731,007
 • Seven hundred million , eighty-four
 • 900,080,500

7.

- a. • 9 million
 • 5 million and 7 hundred thousand
 • 900 thousand
 • 550,223
- b. • Four milliard , six hundred thousand , forty.
 • Four milliard , six hundred thousand , four

- $[4 \times 1,000,000,000] + [4 \times 100,000] + [6 \times 10]$
 • 6,400,042
 • 461,014

8. The numbers will be arranged in an ascending order

3,751,624,069

→ 3,751,624,096

→ 3,751,924,069

→ 3,751,924,096

Answers of multiple choice questions

1. D 2. C 3. B
 4. B 5. C 6. C

Exercise 5

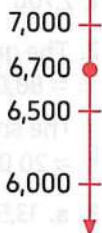
1. a. 420 b. 550
 c. 500 d. 1,290
2. a. 900 b. 400
 c. 4,400 d. 2,000
3. a. 8,000 b. 234,000
 c. 10,000 d. 8,000
4. a. 40,000 b. 60,000
 c. 290,000 d. 7,435,030,000
5. a. 500,000 b. 700,000
 c. 400,000 d. 12,800,000

6. a. 5,000,000 b. 21,000,000
c. 136,000,000 d. 2,453,000,000

7. a. 5,000,000,000
b. 11,000,000,000

8. a. 3,000 b. 57,000
c. 543,000 d. 164,000,000
e. 30,000 f. 4,400
g. 16,000

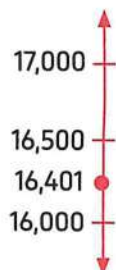
9. a. 7,000



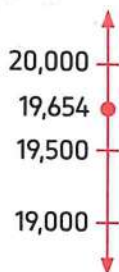
- b. 9,000



- c. 16,000



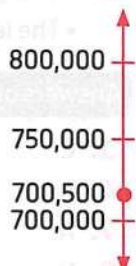
- d. 20,000



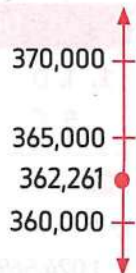
10. a. 300,000



- b. 700,000



- c. 360,000



d. 37,000



11. [The answers may be]

312,400		311,500
312,300		311,610
312,211	or	311,711
312,111		311,812
312,012		311,900

[Answers may vary]

- 12.** • The greatest number = 349,999
• The least number = 250,000

Answers of multiple choice questions

- | | | |
|--------------|--------------|--------------|
| 1. C | 2. B | 3. A |
| 4. A | 5. A | 6. A |
| 7. A | 8. C | 9. C |
| 10. D | 11. B | 12. B |

Unit 1 Assessment

- | | | | |
|----------------|-------------|-------------|-------------|
| 1. 1. D | 2. B | 3. C | 4. C |
| 5. C | 6. B | 7. A | |

2.

1. 7
2. 1,024,569
3. 60,000,000

4. Hundred Thousands

5. 80,124,650

6. 740,000

7. $3,000,000,000 + 500,000,000$
 $+ 4,000,000 + 800,000 + 500 + 1$

8. Hundred Thousand

- | | | | |
|----------------|-------------|-------------|-------------|
| 3. 1. D | 2. C | 3. A | 4. C |
| 5. B | 6. D | 7. B | |

4.

- 1.** 2,700
- 2.** The greatest number is 87,654,320
 $\approx 88,000,000$
The smallest number is 20,345,678
 $\approx 20,000,000$
- 3.** a. 13,561,954 , 6,362,012 , 5,364,569
2,265,698
b. 2,265,698 , 5,364,569 , 6,362,012
13,561,954
- 4.** Composed : 2,805,400,693
Decomposed :
 $2,000,000,000 + 800,000,000 +$
 $5,000,000 + 400,000 + 600 + 90 + 3$

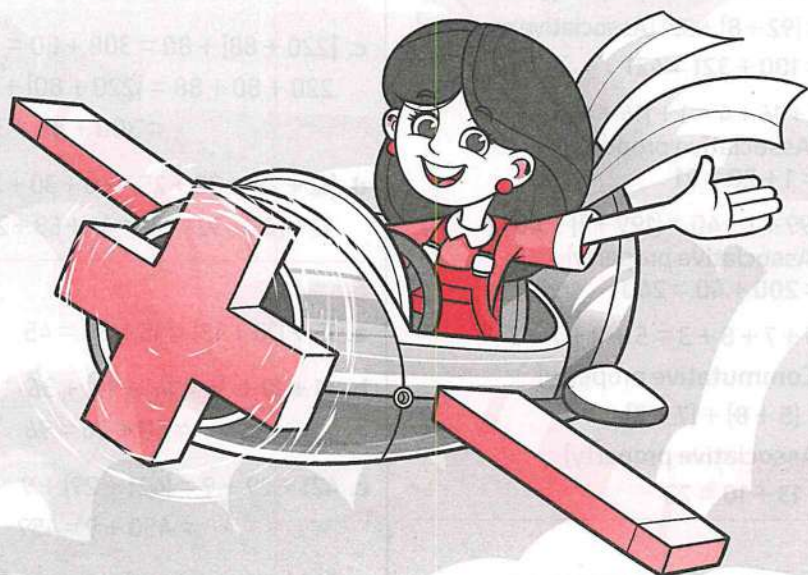
ANSWERS OF

UNIT **2**

Addition and Subtraction Strategies

► **Concept 1** : Using Addition and Subtraction Strategies

► **Concept 2** : Solving Multistep Problems



Concept 1

Using Addition and Subtraction Strategies

Exercise 6

1.

- a. Associative. b. Commutative
c. Associative. d. Additive identity
e. Commutative.

2. a. 5 b. 61 c. 854
 d. commutative e. 0

3.

- a. $92 + 321 + 8 = 92 + 8 + 321$
 [Commutative property]
 $= (92 + 8) + 321$ [Associative property]
 $= 100 + 321 = 421$
- b. $1 + 16 + 4 = 1 + (16 + 4)$
 [Associative property]
 $= 1 + 20 = 21$
- c. $199 + 1 + 40 = (199 + 1) + 40$
 [Associative property]
 $= 200 + 40 = 240$
- d. $5 + 7 + 8 + 3 = 5 + 8 + 7 + 3$
 [Commutative property]
 $= (5 + 8) + (7 + 3)$
 [Associative property]
 $= 13 + 10 = 23$

4.

- a. $75 + (25 + 46) = 75 + 71 = 146$
 $(75 + 46) + 25 = 121 + 25 = 146$
- b. $(10 + 4) + 20 + 17 = 14 + 20 + 17 = 51$
 $10 + (4 + 20) + 17 = 10 + 24 + 17 = 51$
 $10 + 4 + (20 + 17) = 10 + 4 + 37 = 51$

c. $(820 + 78) + 12 + 80 = 898 + 12 + 80$
 $= 990$

$$820 + (78 + 12) + 80 = 820 + 90 + 80 = 990$$

$$(820 + 80) + (78 + 12) = 900 + 90 = 990$$

5.

a. $[30 + 70] + 15 = 100 + 15 = 115$
 $30 + [70 + 15] = 30 + 85 = 115$

b. $11 + [26 + 34] = 11 + 60 = 71$
 $11 + 34 + 26 = [11 + 34] + 26$
 $= 45 + 26 = 71$

c. $[220 + 88] + 80 = 308 + 80 = 388$
 $220 + 80 + 88 = [220 + 80] + 88$
 $= 300 + 88 = 388$

d. $[12 + 28] + 30 + 25 = 40 + 30 + 25 = 95$
 $12 + [28 + 30] + 25 = 12 + 58 + 25 = 95$

6.

a. $15 + [18 + 12] = 15 + 30 = 45$

b. $41 + 19 + 36 = [41 + 19] + 36$
 $= 60 + 36 = 96$

c. $421 + 29 + 9 = [421 + 29] + 9$
 $= 450 + 9 = 459$

d. $342 + 8 + 4 + 46 = [342 + 8] + [4 + 46]$
 $= 350 + 50 = 400$

e. $730 + 20 + 13 + 17$
 $= [730 + 20] + [13 + 17]$
 $= 750 + 30 = 780$

7.

$$24 + 35 + 105 + 66 = 24 + 66 + 105 + 35$$

[Commutative property]

$$= [24 + 66] + [105 + 35]$$

[Associative property]

$$= 90 + 140 = 230$$

Answers of multiple choice questions

1. C 2. A 3. D
 4. C 5. B 6. B
 7. C 8. A 9. B

Exercise 7

1.

a.

$$\begin{array}{r} 19 \\ + 32 \\ \hline 51 \end{array} \rightarrow \begin{array}{r} 20 \\ + 30 \\ \hline 50 \end{array}$$

b.

$$\begin{array}{r} 351 \\ + 286 \\ \hline 637 \end{array} \rightarrow \begin{array}{r} 350 \\ + 290 \\ \hline 640 \end{array}$$

c.

$$\begin{array}{r} 1,578 \\ + 4,121 \\ \hline 5,699 \end{array} \rightarrow \begin{array}{r} 1,580 \\ + 4,120 \\ \hline 5,700 \end{array}$$

2.

a.

$$\begin{array}{r} 726 \\ + 89 \\ \hline 815 \end{array} \rightarrow \begin{array}{r} 700 \\ + 100 \\ \hline 800 \end{array}$$

b.

$$\begin{array}{r} 134 \\ + 588 \\ \hline 722 \end{array} \rightarrow \begin{array}{r} 100 \\ + 600 \\ \hline 700 \end{array}$$

c.

$$\begin{array}{r} 34,762 \\ + 21,384 \\ \hline 56,146 \end{array} \rightarrow \begin{array}{r} 34,800 \\ + 21,400 \\ \hline 56,200 \end{array}$$

3.

a.

$$\begin{array}{r} 3,355 \\ + 809 \\ \hline 4,164 \end{array} \rightarrow \begin{array}{r} 3,000 \\ + 1,000 \\ \hline 4,000 \end{array}$$

b.

$$\begin{array}{r} 26,721 \\ + 45,398 \\ \hline 72,119 \end{array} \rightarrow \begin{array}{r} 27,000 \\ + 45,000 \\ \hline 72,000 \end{array}$$

c.

$$\begin{array}{r} 85,632 \\ + 1,168 \\ \hline 86,800 \end{array} \rightarrow \begin{array}{r} 86,000 \\ + 1,000 \\ \hline 87,000 \end{array}$$

4. You may round in many ways.

a.

$$\begin{array}{r} 593 \\ + 194 \\ \hline 787 \end{array} \rightarrow \begin{array}{r} 600 \\ + 200 \\ \hline 800 \end{array}$$

b.

$$\begin{array}{r} 579 \\ + 62 \\ \hline 641 \end{array} \rightarrow \begin{array}{r} 600 \\ + 100 \\ \hline 700 \end{array}$$

c.

$$\begin{array}{r} 3,975 \\ + 8,062 \\ \hline 12,037 \end{array} \rightarrow \begin{array}{r} 4,000 \\ + 8,000 \\ \hline 12,000 \end{array}$$

d.

$$\begin{array}{r} 8,049 \\ + 6,199 \\ \hline 14,248 \end{array} \rightarrow \begin{array}{r} 8,000 \\ + 6,000 \\ \hline 14,000 \end{array}$$

e.

$$\begin{array}{r} 34,013 \\ + 9,340 \\ \hline 43,353 \end{array} \rightarrow \begin{array}{r} 34,000 \\ + 9,000 \\ \hline 43,000 \end{array}$$

f.

$$\begin{array}{r} 3,520 \\ + 2,401 \\ \hline 5,921 \end{array} \rightarrow \begin{array}{r} 4,000 \\ + 2,000 \\ \hline 6,000 \end{array}$$

5. You may round in many ways.

a. $17 + 69 = 86$

$20 + 70 = 90$

b. $523 + 387 = 910$

$500 + 400 = 900$

c. $4,584 + 2,428 = 7,012$

$5,000 + 2,000 = 7,000$

d. $69,210 + 26,428 = 95,638$

$69,000 + 26,000 = 95,000$

e. $25,749 + 175,684 = 201,433$

$25,700 + 175,700 = 201,400$

f. $259,111 + 9,999 = 269,110$

$259,000 + 10,000 = 269,000$

6.

a. 520

b. 601

c. 10,980

d. 30,000

e. 29,324

f. 123,573

g. 72,000

h. 900,660

7.

a. >

b. =

c. >

d. >

e. <

f. >

8.

a. The total sum = $273 + 375 = 648$ ships

b. The number of ants = $142 + 165$
= 307 ants

c. Mona has = $5,235 + 2,365 = 7,600$ L.E.

d. Number of tourists
= $7,825 + 8,245 = 16,070$ tourists

e. Heba paid = $21,675 + 18,325$
= 40,000 L.E.

f. The total cost = $342,650 + 245,950$
= 588,600 pounds

g. The total number of visitors
= $149,000 + 125,000 = 274,000$ visitors

h. The total number
= $1,653,465 + 3,312,447 = 4,965,912$

9.

a.

$$\begin{array}{r} 7 \quad \boxed{6} \quad , \quad 3 \quad 4 \quad \boxed{3} \\ + \quad \boxed{2} \quad 2 \quad , \quad \boxed{3} \quad 2 \quad 5 \\ \hline 9 \quad 8 \quad , \quad 6 \quad \boxed{6} \quad 8 \end{array}$$

b.

$$\begin{array}{r} 2 \quad \boxed{5} \quad , \quad 3 \quad 8 \quad \boxed{1} \\ + \quad \boxed{5} \quad 9 \quad , \quad 5 \quad \boxed{4} \quad 4 \\ \hline 8 \quad 4 \quad , \quad \boxed{9} \quad 2 \quad 5 \end{array}$$

Answers of multiple choice questions

1. C 2. C 3. D
 4. B 5. D 6. B
 7. D 8. D 9. D
 10. C 11. B 12. C
 13. C

Exercise 8

1.

a.

$$\begin{array}{r} 9,263 \\ - 3,842 \\ \hline 5,421 \end{array} \rightarrow \begin{array}{r} 9,000 \\ - 4,000 \\ \hline 5,000 \end{array}$$

b.

$$\begin{array}{r} 6,625 \\ - 4,417 \\ \hline 2,208 \end{array} \rightarrow \begin{array}{r} 7,000 \\ - 4,000 \\ \hline 3,000 \end{array}$$

c.

$$\begin{array}{r} 1,816 \\ - 1,066 \\ \hline 750 \end{array} \rightarrow \begin{array}{r} 2,000 \\ - 1,000 \\ \hline 1,000 \end{array}$$

d.

$$\begin{array}{r} 25,884 \\ - 18,875 \\ \hline 7,009 \end{array} \rightarrow \begin{array}{r} 26,000 \\ - 19,000 \\ \hline 7,000 \end{array}$$

e.

$$\begin{array}{r} 46,835 \\ - 19,727 \\ \hline 27,108 \end{array} \rightarrow \begin{array}{r} 47,000 \\ - 20,000 \\ \hline 27,000 \end{array}$$

f.

$$\begin{array}{r} 24,305 \\ - 3,071 \\ \hline 21,234 \end{array} \rightarrow \begin{array}{r} 24,000 \\ - 3,000 \\ \hline 21,000 \end{array}$$

g.

$$\begin{array}{r} 23,640 \\ - 14,635 \\ \hline 9,005 \end{array} \rightarrow \begin{array}{r} 24,000 \\ - 15,000 \\ \hline 9,000 \end{array}$$

h.

$$\begin{array}{r} 538,109 \\ - 321,299 \\ \hline 216,810 \end{array} \rightarrow \begin{array}{r} 538,000 \\ - 321,000 \\ \hline 217,000 \end{array}$$

2.

a. $2,654 - 1,431 = 1,223$

$3,000 - 1,000 = 2,000$

b. $3,458 - 2,064 = 1,394$

$3,000 - 2,000 = 1,000$

c. $7,326 - 5,296 = 2,030$

$7,000 - 5,000 = 2,000$

d. $70,623 - 30,611 = 40,012$

$71,000 - 31,000 = 40,000$

e. $238,763 - 18,764 = 219,999$

$239,000 - 19,000 = 220,000$

f. $853,004 - 45,878 = 807,126$

$853,000 - 46,000 = 807,000$

g. $542,302 - 281,976 = 260,326$

$542,000 - 282,000 = 260,000$

h. $721,010 - 350,891 = 370,119$

$721,000 - 351,000 = 370,000$

3. a. 2,132 b. 901 c. 1,243

d. 1,306 e. 6,606 f. 44,078

g. 204,655 h. 88,223 i. 2,549

j. 4,001

4. a. > b. < c. >

d. > e. =

5.

a. The remaining distance

$= 675 - 239 = 436$ km

b. The money remained

$= 8,460 - 3,650 = 4,810$ pounds

c. The number of males

$= 7,258 - 2,147 = 5,111$ males

d. Number of ants

$= 20,000 - 1,500 = 18,500$ ants

e. Mohamed paid $= 668,500 - 342,650$

$= 325,850$ pounds

f. The difference $= 517,901 - 112,211$

$= 405,690$ people

g. Mohamed paid $= 7,250 + 4,750$

$= 12,000$ L.E.

The reminder $= 15,000 - 12,000$

$= 3,000$ L.E.

h. The ant have to go $= 3,548 - 1,672$

$= 1,876$ cm

i. The number of more ants

$= 3,452 - 1,267 = 2,185$ ants

j. The difference $= 255,000 - 6,200$

$= 248,800$ ants

6.

a.

	8	3	9	7
-	5	3	7	3
	3	0	2	4

b.

	2	3	6	4
-	1	2	2	5
	1	1	3	9

Answers of multiple choice questions

1. B

2. C

3. C

4. B

5. A

6. C

7. B

8. C

9. A

10. A

11. A

Exercise 9

1.

a. $x = 34,750 + 19,051 = 53,801$

b. $y = 121,725 - 10,714 = 111,011$

c. $a = 78,514 - 29,125 = 49,389$

d. $m = 41,621 + 52,321 = 93,942$

2.

a. Bar model:

14,000	
n	6,000

Solution:

$n = 14,000 - 6,000 = 8,000$

b. Bar model:

m	
35,462	2,741

Solution:

$m = 2,741 + 35,462 = 38,203$

c. Bar model:

b	
53,500	75,200

Solution:

$b = 75,200 + 53,500 = 128,700$

d. Bar model:

7,549	
y	4,641

Solution:

$y = 7,549 - 4,641 = 2,908$

e. Bar model:

935,075	
725,625	c

Solution:

$c = 935,075 - 725,625 = 209,450$

f. Bar model:

13,280	
d	5,420

Solution:

$d = 13,280 - 5,420 = 7,860$

g. Bar model:

7,000	
5,000	a

Solution:

$a = 7,000 - 5,000 = 2,000$

h. Bar model:

810,775	
f	205,925

Solution:

$f = 810,775 - 205,925 = 604,850$

3.

a. 11,091 b. 4,000 c. 3,310

d. 3,107 e. 175 f. 4,250

g. 2,000 h. 4,500 i. 210

j. 84 k. 3,625,269

4.

a. Equation: $1,234 + l$

$= 2,340$

2,340	
1,234	l

Solution:

$l = 2,340 - 1,234 = 1,106$ girls

b. Equation: $2,500 + n$

$= 12,000$

12,000	
2,500	n

Solution: $n = 12,000 - 2,500$

$= 9,500$ species

c. Equation: $2,164 + x = 5,328$

Solution:

$x = 5,328 - 2,164$

$= 3,164$ males

5,328	
2,164	x

d. Equation : $700 + y = 1,200$

Solution : $y = 1,200 - 700$
 $= 500$ ants

1,200	
700	y

5. Solution : $l = 4$

8	
l	l

Answers of multiple choice questions

1. D 2. B 3. A

4. D 5. D 6. B

7. B 8. D 9. C

10. C

Exercise 10

1.

a. Mohamed paid = $6,250 + 3,750$
 $= 10,000$ L.E.

The left = $16,000 - 10,000$
 $= 6,000$ L.E.

b. You read in two weeks
 $= 423 + 346 = 769$ pages
 The left = $900 - 769 = 131$ pages

c. Bassem and Mina collected
 $= 198 + 357 = 555$ stamps
 The number of more stamps Sara collected = $743 - 555 = 188$ stamps

d. The number of toys in first , second and third months
 $= 6,580 + 7,214 + 5,975 = 19,769$ toys

e. The number of ants in the two colonies = $27,385 + 52,890$
 $= 80,275$ ants

The number of more ants to join
 $= 173,500 - 80,275 = 93,225$ ants

f. The number of visitors in January , February and March

$= 59,000 + 27,525 + 32,975$
 $= 119,500$ visitors

The needed visitors to reach the count = $150,000 - 119,500$
 $= 30,500$ visitors

g. The population of Matrouh and South Sinai = $429,999 + 108,951$
 $= 538,950$ people

The more population in Matrouh and South Sinai than New Valley
 $= 538,950 - 256,088$
 $= 282,862$ people

h. The number of ants on Monday
 $= 1,725 + 22,750 + 6,075$
 $= 30,550$ ants in the large colony
 The number of ants joined the colony since Monday
 $= 50,750 - 30,550 = 20,200$ ants

i. The total of calories

$$= 340 + 190 + 85 + 255$$

$$= 870 \text{ calories}$$

So, Ahmed can eat today

$$2,000 - 870 = 1,130 \text{ calories}$$

2.

a. The number of red shirts

$$= 18,421 + 43,218 + 14,132$$

$$= 75,771 \text{ shirts}$$

The number of green shirts

$$= 15,436 + 33,142 + 5,347$$

$$= 53,925 \text{ shirts}$$

The number of more red shirts than green shirts = $75,771 - 53,925$

$$= 21,846 \text{ shirts}$$

b. The number of small shirts

$$= 15,436 + 18,421 = 33,857 \text{ shirts}$$

The number of large shirts

$$= 5,347 + 14,132 = 19,479 \text{ shirts}$$

The number of more small shirts than large shirts = $33,857 - 19,479$

$$= 14,378 \text{ shirts}$$

Unit 2 Assessment

1. 1. B 2. A 3. A

4. B 5. D 6. B

7. C

2. 1. 123,573 2. 0 3. 15,595

4. 5, 7 5. 675 6. 63

7. 6,650 8. 3,193

3. 1. A 2. B 3. C

4. A 5. C 6. B

7. D

4.

1. a. 77,777 b. 489

2. Equation : $5 + 6 + m = 18$

$$11 + m = 18$$

$$\text{Solution : } m = 18 - 11 = 7 \text{ pieces}$$

3. Mohamed paid = $7,250 + 4,750$
= 12,000 L.E.

$$\text{The left} = 15,000 - 12,000 \\ = 3,000 \text{ L.E.}$$

4. The number of ants = $692 + 165$
= 857 ants

ANSWERS OF

UNIT **3**

Concepts of Measurement

► **Concept 1** : Metric Measurement

► **Concept 2** : Measuring Time



Concept 1

Metric Measurement

Exercise 11

1. 1. Centimeter 2. Kilometer
3. Kilometer 4. Millimeter
5. Kilometer

2. a. 1,000 b. 12,000 c. 160
d. 120 e. 100 f. 500
g. 700 h. 40 i. 7
j. 900 k. 7 l. 53
m. 845 n. 348 o. 3
p. 9,250 q. 27,055 r. 4,23
s. 89,7 t. 2,000

3. a. 2 m, 30 cm b. 4 m, 78 cm
c. 8 dm, 5 cm d. 3,040 m
e. 591 cm f. 75 mm

4.

- a. 8 mm, 8 m, 8,000 cm, 8 km

- b. The distance = $7 \times 3 = 21$ km
= 21,000 m

- c. 1.8 m = 800 cm

2. It traveled = $10 \times 1 = 10$ km

It traveled = 10,000 m

It traveled = 1,000,000 cm

- d. The length of a line = $100,000 \times 1$
= 100,000 cm
= 1,000 m

- e. The length of a line = $100,000 \times 1$
= 100,000 cm
= 1,000 m
= 1 km

Answers of multiple choice questions

1. C 2. C 3. C
4. A 5. B 6. B
7. C 8. C 9. A
10. C 11. B 12. B
13. D

Exercise 12

1. a. 3,000 b. 4,000 c. 8,000
d. 5,000 e. 7 f. 19
g. 5 h. 30 i. 5,321
j. 6,454 k. 6,450 l. 2,456
m. 35,086 n. 4,535 o. 14
p. 7,324

2. a. 4,590 b. 8,400
c. 7,414 d. 2,030

3. a. > b. < c. <
d. = e. > f. <

4. 4,769 g, 6 kg, 68,000 g, 980 kg, 2 tons

5. 3,493 grams
= 3 kilograms and 493 grams

6. The weight
= 14 kilograms and 89 grams
= $14,000 + 89 = 14,089$ grams

7. a. Bowling ball , Basketball ,
Tennis ball , Table tennis ball

b. The total mass
 $= [616 + 616] + [145 + 145]$
 $= 1,232 + 290 = 1,522$ grams
 $= 1$ kg , 522 g
 So , it is less than 2 kg

Answers of multiple choice questions

1. D 2. B 3. D
 4. C 5. D 6. C
 7. D 8. A 9. C
 10. A 11. A 12. B
 13. C

Exercise 13

1. a. 2,500 b. 6,000
 c. 3,000 d. 9,000
 e. 50,000 f. 2
 g. 6 h. 10
 i. 73,000 j. 560
 k. 8,500 l. 19,325
 m. 84,084 n. 5 , 700
 o. 5,328 p. 2 , 222
 q. 61,254 r. 7 , 5
 s. 541 , 541 t. 4,234
 u. 7,400 v. 15

2. a. 6 , 360 b. 9 , 425
 c. 8,910 d. 2,250

3. a. 5,000 b. 8,035
 c. 6,000 d. 4
 e. 11 , 495 f. 4,700
 g. 25,294 h. 10,100
 i. 445 j. 10

4. 4,000 mL , 5 L , 6 L , 13,000 mL

5.

- a. What Mona drunk = 4 L = 4,000 mL
 b. 45 L = 45,000 mL
 c. The left = 3 L - 1 L , 500 mL
 $= 3,000 \text{ mL} - 1,500 \text{ mL} = 1,500 \text{ mL}$
 d. She needs = 10 L - 5 L , 245 mL
 $= 10,000 \text{ mL} - 5,245 \text{ mL}$
 $= 4,755 \text{ mL}$
 e. The car used
 $= 20 \text{ L} , 500 \text{ mL} - 15 \text{ L} , 250 \text{ mL}$
 $= [20 \text{ L} - 15 \text{ L}] , [500 \text{ mL} - 250 \text{ mL}]$
 $= 5 \text{ L} , 250 \text{ mL}$

Answers of multiple choice questions

1. B 2. D 3. A
 4. D 5. A 6. D
 7. C 8. A 9. D
 10. D 11. D 12. B

Concept 2

Measuring Time

Exercise 14

1. a. 4:15 b. 1:50 c. 7:45

2. a. 7:00 , It's 7 o'clock
 b. 8:10 , It's 10 past 8
 c. 4:40 , It's 20 to 5

3.

Minute	Second	Hour	Minute
1	60	1	60
2	120	2	120
3	180	3	180
4	240	4	240
5	300	5	300
6	360	6	360
7	420	7	420
8	480	8	480
9	540	9	540
10	600	10	600

Day	Hour	Week	Day
1	24	1	7
2	48	2	14
3	72	3	21
4	96	4	28
5	120	5	35
6	144	6	42
7	168	7	49
8	192	8	56
9	216	9	63
10	240	10	70

4. a. 35 b. 120 c. 240
 d. 128 e. 300 f. 180
 g. 120 h. 3, 4 i. 2, 10
 j. 2, 2

5. a. 630 b. 10 c. 17
 d. 29 e. 116 f. 60
 g. 630 h. 130 i. 260
 j. 375

6. a. 4:10 b. 4:51 c. 3:20
 d. 4:16 e. 6:05 f. 9:02
 g. 2:25 h. 4:18 i. 5:55

7.

a. Elapsed time

Hours	Minutes
9	50
— 1	20
8	30

b. Elapsed time

Hours	Minutes
9 10	77 17
— 6	40
3	37

c. Elapsed time

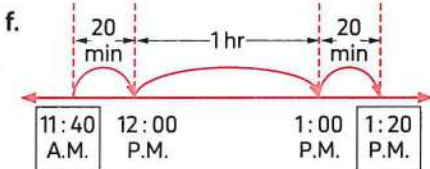
Hours	Minutes
7 8	60 00
— 4	27
3	33

d. Elapsed time

	Hours	:	Minutes
	9	:	43
-	6	:	43
	3	:	00

e. Elapsed time

	Hours	:	Minutes
	¹¹ 12	:	⁶⁰ 00
-	6	:	15
	5	:	45



$$\begin{aligned}\text{Elapsed time} &= 1 \text{ hr} + 20 \text{ min} + 20 \text{ min} \\ &= 1 \text{ hr}, 40 \text{ min}\end{aligned}$$

8.

a. Number of minutes = $[2 \times 60] + 15$
 $= 120 + 15$
 $= 135 \text{ minutes}$

b. Number of hours = 19×3
 $= 19 + 19 + 19$
 $= 57 \text{ hours}$

c. Total = $3 + 4 + 5 = 12 \text{ hours}$
 $= 12 \times 60 = 720 \text{ minutes}$

d. $240 \text{ minutes} = 60 \text{ min} + 60 \text{ min}$
 $+ 60 \text{ min} + 60 \text{ min}$
 $= 4 \text{ hours}$

Number of hours is 4 hours.

9.

a.

	Hours	:	Minutes
	7	:	00
+	2	:	40
	9	:	40

The party got over at 9 : 40 in the evening.

b.

	Hours	:	Minutes
	8	:	35
+	1	:	30
	9	:	65
	10	:	05 A.M.

She finished at 10 : 05 A.M.

c.

	Hours	:	Minutes
	5	:	10
+	0	:	57
	5	:	67
	6	:	07 P.M.

The train arrived at 6 : 07 P.M.

d.

Hours	:	Minutes
⁹ 10	:	⁶⁵ 05
- 7	:	50
2	:	15

The elapsed time of the game is
2 hours and 15 minutes

e.

Hours	:	Minutes
3	:	30
+ 0	:	45
+ 0	:	25
3	:	100
4	:	40 P.M.

He finished at 4 : 40 P.M.

f. [1]

Hours	:	Minutes
1	:	22
+ 2	:	12
+ 1	:	57
4	:	91
5	:	31

No, the girls don't have enough time.

[2] The total time of the two shortest movies is

Hours	:	Minutes
1	:	22
+ 1	:	57
2	:	79
3	:	19

Hours	:	Minutes	
5	:	30	P.M.
+ 3	:	19	
8	:	49	P.M.

The movies will end at 8 : 49 P.M.

g.

Hours	:	Minutes
7	:	42
- 6	:	30
1	:	12

The elapsed time of the ant looking for food is 1 : 12

Answers of multiple choice questions

1. C 2. C 3. C
4. D 5. A 6. D
7. D 8. C 9. C
10. A 11. C 12. D

Exercise 15

First : Problems involving length

1.

The tall will be = $44 \text{ cm} + 5 \text{ mm} + 35 \text{ cm}$
 $= 79 \text{ cm} + 5 \text{ mm}$

2.

The left
 $= 63 \text{ m} - [56 \text{ m} + 21 \text{ cm}]$
 $= [62 \text{ m} + 100 \text{ cm}] - [56 \text{ m} + 21 \text{ cm}]$
 $= 6 \text{ m} + 79 \text{ cm}$

3.

The two ant lines together
 $= 30 \text{ cm} + 500 \text{ mm}$
 $= 30 \text{ cm} + 50 \text{ cm} = 80 \text{ cm}$

4.

Ant from colony A walked 2 km
 Ant from colony B walked $3,000 \text{ m}$
 $= 3 \text{ km}$
 So, the farthest is the ant from colony B
 The difference = $3 - 2 = 1 \text{ km}$

5.

His tall was = $[1 \text{ m} + 6 \text{ cm}] - 10 \text{ cm}$
 $= 106 - 10 = 96 \text{ cm}$

Second : Problems involving mass

6.

Adam bought = $5 \text{ kg} + 200 \text{ g}$
 $= 5,000 + 200$
 $= 5,200 \text{ g}$

7.

The total mass
 $= [8 \text{ kg} + 10 \text{ kg}] + [500 \text{ g} + 225 \text{ g} + 275 \text{ g}]$
 $= 18 \text{ kg} + 1,000 \text{ g} = 18 \text{ kg} + 1 \text{ kg} = 19 \text{ kg}$

8.

The consumed = $25 + 37 = 62 \text{ g}$
 The left = $950 - 62 = 888 \text{ g}$

9.

The onions weight
 $= [2 \text{ kg} + 920 \text{ g}] - [1,075 \text{ g}]$
 $= 2,920 - 1,075 = 1,845 \text{ g}$
 The weight of potatoes and onions
 $= 2,920 + 1,845 = 4,765 \text{ g}$

10.

Ali's cat weighs = $7 \text{ kg} + 450 \text{ g}$
 Ali's dog weighs = $17 \text{ kg} + 120 \text{ g}$
 His two pets weigh in all now
 $= [7 \text{ kg} + 450 \text{ g}] + [17 \text{ kg} + 120 \text{ g}]$
 $= [24 \text{ kg} + 570 \text{ g}]$

Third : Problems involving capacity

11.

$20,000 \text{ mL} = 20 \text{ L}$
 The tank needs = $100 - 20 = 80 \text{ L}$

12.

The milk he sold in the 5 days
 $= [46 \text{ L} + 200 \text{ mL}] + [53 \text{ L} + 195 \text{ mL}]$
 $= 99 \text{ L} + 395 \text{ mL}$

13.

Mr. Emad bought = $4 \times 2 = 8 \text{ L}$
 $= 8,000 \text{ mL}$

The students drunk
 $= 8,000 \text{ mL} - [2 \text{ L} , 829 \text{ mL}]$
 $= 8,000 - 2,829 = 5,171 \text{ mL}$

Fourth : Problems involving time

14.

The bus will reach at

	hr.	:	min.
	4	:	30 P.M.
+	1	:	25
	5	:	55 P.M.

15.

It will end at

	hr.	:	min.
	6	:	30 P.M.
+	3	:	15
	9	:	45 P.M.

16.

A pharaoh ant takes = 45 days
 A carpenter ant takes
 $= 12 \text{ weeks} = 12 \times 7 = 7 \times [10 + 2]$
 $= [7 \times 10] + [7 \times 2] = 70 + 14 = 84 \text{ days}$
 So, a carpenter ant takes longer to grow.
 The difference $= 84 - 45 = 39 \text{ days}$

17.

A worker ant takes = 250 min.
 A queen ant takes
 $= 9 \text{ hours} = 9 \times 60 = 540 \text{ min.}$
 So, a queen ant sleeps longer
 The difference $= 540 - 250 = 290 \text{ min.}$

18. The total she gave
 $= [12 \text{ m} , 53 \text{ cm}] + [18 \text{ m} , 35 \text{ cm}]$
 $+ [9 \text{ m} , 7 \text{ cm}] = 39 \text{ m} , 95 \text{ cm}$
 The left $= 40 \text{ m} - [39 \text{ m} , 95 \text{ cm}]$
 $= 5 \text{ cm}$

Answers of multiple choice questions

1. D 2. C 3. D 4. B
 5. D 6. A 7. D

Exercise 16

First : Problems involving length

1. Ants walk in 5 days
 $= 5,000 \times 5 = 25,000 \text{ meters}$
2. The distance
 $= 750 \times 5 = 3,750 \text{ meters}$
3. Each piece length $= 12 \div 3 = 4 \text{ m}$
 $= 4 \times 100$
 $= 400 \text{ cm}$
4. $5,000 \text{ m} = 5 \text{ km}$
 Sara walked in all $= 5 \times 9 = 45 \text{ km}$

Second : Problems involving mass

5. The mass of 4 boxes
 $= 320 \times 4 = 1,280 \text{ kg}$
6. What he gains in 5 weeks
 $= 500 \times 5 = 2,500 \text{ g}$
 His mass at the end
 $= 100 \text{ kg} + 2,500 \text{ g}$
 $= 100,000 \text{ g} + 2,500 \text{ g} = 102,500 \text{ g}$
 $= 102 \text{ kg} , 500 \text{ g}$
7. The weight carried by each ant
 $= 1 \times 50 = 50 \text{ g}$

Answers

The weight carried in all
 $= 50 \times 10 = 500 \text{ g}$

Third : Problems involving capacity

8. A water purifier cleans each day
 $= 10 \text{ L} , 50 \text{ L}$
 $= 10,000 \text{ mL} + 50 \text{ mL} = 10,050 \text{ mL}$
 Water will be cleaned in 10 days
 $= 10,050 \times 10 = 100,500 \text{ mL}$
 $= 100 \text{ L} , 500 \text{ mL}$

9. He needs per day
 $= 500 \times 4 = 2,000 \text{ mL} = 2 \text{ L}$
 He needs for 1 week $= 2 \times 7 = 14 \text{ L}$

10. Each person has $= 32 \div 8 = 4 \text{ L}$

Fourth : Problems involving time

11. He slept $= 8 \times 5 = 40 \text{ hours}$

12. An ant work in 3 days
 $= 19 \times 3 = 57 \text{ hours}$

13. Half an hour $= 30 \text{ min}$
 The total $= 30 \times 5 = 150 \text{ min}$

14.

Day	Climbing distance	Reversing distance	Total distance traveled
1	4 m	2 m	2 m
2	4 m	2 m	4 m
3	4 m	2 m	6 m
4	4 m	2 m	8 m
5	4 m	2 m	10 m
6	4 m	2 m	12 m
7	4 m	2 m	14 m
8	4 m	2 m	16 m
9	4 m	0	20 m

* It takes 9 days
 [get out of the well]

Answers of multiple choice questions

1. C 2. B 3. B 4. B
 5. D 6. C 7. D 8. C

Unit 3 Assessment

1. 1. C 2. B 3. C 4. B
 5. A 6. B 7. B
2. 1. 35 2. 9 3. 15 , 423
 4. 35,076 5. 31 , 310 6. 845
 7. 9:00 8. 5:09
3. 1. B 2. B 3. A 4. A
 5. C 6. D 7. A

4.

1. The total mass $= 300 \times 6 = 1,800 \text{ g}$
 $= 1 \text{ kg} , 800 \text{ g}$
2. The total mass $= [3 \text{ kg} , 400 \text{ g}]$
 $+ [5 \text{ kg} , 217 \text{ g}]$
 $= 8 \text{ kg} , 617 \text{ g}$
3. Height of each book $= 8 \text{ cm}$
 $, 5 \text{ mm} = 85 \text{ mm}$
 The total height $= 85 \times 10 = 850 \text{ mm}$
 $= 85 \text{ cm}$
4. a. 9,450 b. 10 , 100
 c. 7 , 5 d. 7 , 500

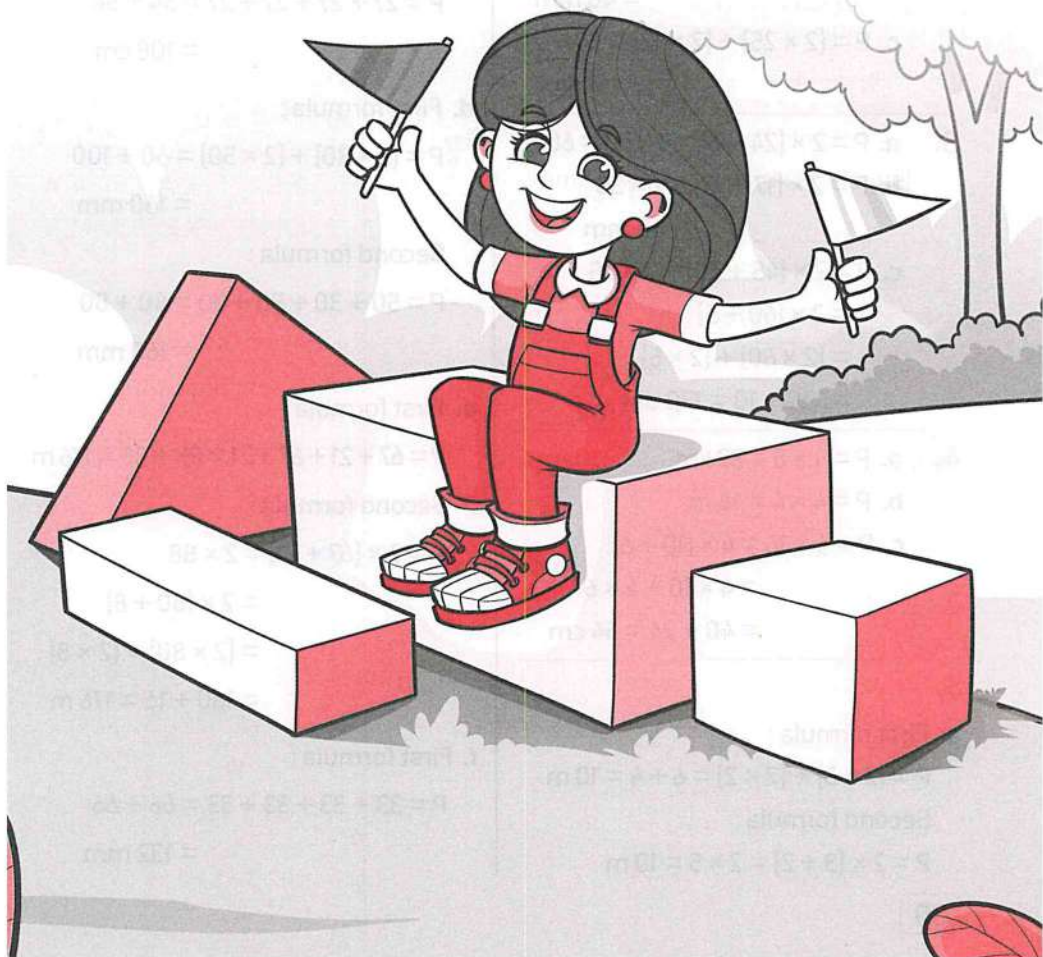
ANSWERS OF

UNIT 4

Area and Perimeter

► Concept 1 :

Explore Area and Perimeter



Exercise 17

1. a. $P = 5 + 2 + 5 + 2 = 14$ m
b. $P = 12 + 9 + 12 + 9 = 42$ cm
c. $P = 17 + 4 + 17 + 4 = 42$ cm

2. a. $P = [2 \times 10] + [2 \times 7] = 20 + 14 = 34$ m
b. $P = [2 \times 15] + [2 \times 9] = 30 + 18 = 48$ mm
c. $P = [2 \times 25] + [2 \times 12] = 50 + 24 = 74$ km

3. a. $P = 2 \times [24 + 6] = 2 \times 30 = 60$ m
b. $P = 2 \times [17 + 13] = 2 \times 30 = 60$ mm
c. $P = 2 \times [45 + 20] = 2 \times 65 = 2 \times [60 + 5] = [2 \times 60] + [2 \times 5] = 120 + 10 = 130$ dm

4. a. $P = 4 \times 8 = 32$ km
b. $P = 4 \times 4 = 16$ m
c. $P = 4 \times 16 = 4 \times [10 + 6] = 4 \times 10 + 4 \times 6 = 40 + 24 = 64$ cm

5.

a. First formula :

$$P = [2 \times 3] + [2 \times 2] = 6 + 4 = 10 \text{ m}$$

Second formula :

$$P = 2 \times [3 + 2] = 2 \times 5 = 10 \text{ m}$$

b. First formula : $P = 4 \times 9 = 36$ cm

Second formula :

$$P = 9 + 9 + 9 + 9 = 18 + 18 = 36 \text{ cm}$$

c. First formula :

$$P = 4 \times 27 = 4 \times [20 + 7]$$

$$= [4 \times 20] + [4 \times 7] = 80 + 28 = 108 \text{ cm}$$

Second formula :

$$P = 27 + 27 + 27 + 27 = 54 + 54 = 108 \text{ cm}$$

d. First formula :

$$P = [2 \times 30] + [2 \times 50] = 60 + 100 = 160 \text{ mm}$$

Second formula :

$$P = 50 + 30 + 50 + 30 = 80 + 80 = 160 \text{ mm}$$

e. First formula :

$$P = 67 + 21 + 67 + 21 = 88 + 88 = 176 \text{ m}$$

Second formula :

$$\begin{aligned} P &= 2 \times [67 + 21] = 2 \times 88 \\ &= 2 \times [80 + 8] \\ &= [2 \times 80] + [2 \times 8] \\ &= 160 + 16 = 176 \text{ m} \end{aligned}$$

f. First formula :

$$\begin{aligned} P &= 33 + 33 + 33 + 33 = 66 + 66 \\ &= 132 \text{ mm} \end{aligned}$$

Second formula :

$$\begin{aligned} P &= 4 \times 33 = 4 \times [30 + 3] \\ &= [4 \times 30] + [4 \times 3] \\ &= 120 + 12 = 132 \text{ mm} \end{aligned}$$

6. a. 2 b. $[2 \times l] + [2 \times w]$
 c. 4, 5 d. 12 e. 12
 f. 24 g. 26 cm

7. a. $P = 4 \times 4 = 16 \text{ cm}$
 b. $P = 2 \times [2 + 5] = 2 \times 7 = 14 \text{ cm}$

8. $P = 2 \times [6 + 4] = 2 \times 10 = 20 \text{ m}$

9.

The perimeter $= [2 \times 7] + [2 \times 4] = 14 + 8$
 $= 22 \text{ meters.}$

10.

The perimeter $= 2 \times [8 + 6] = 2 \times 14$
 $= 2 \times [10 + 4]$
 $= [2 \times 10] + [2 \times 4]$
 $= 20 + 8 = 28 \text{ cm}$

11.

The perimeter $= 2 \times [16 + 14] = 2 \times 30$
 $= 60 \text{ cm}$

12.

The length of the border of Sarah's cake $= 4 \times 30 = 120 \text{ cm}$

13.

The perimeter of the frame
 $= 4 \times 63 = 4 \times [60 + 3] = [4 \times 60] + [4 \times 3]$
 $= 240 + 12 = 252 \text{ mm}$

14.

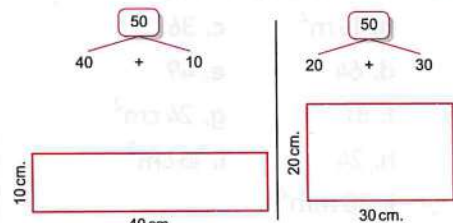
The length of the rope
 $= 2 \times [105 + 68] = 2 \times 173$
 $= 2 \times [100 + 70 + 3]$
 $= 2 \times 100 + 2 \times 70 + 2 \times 3$
 $= 200 + 140 + 6 = 346 \text{ m}$

15.

1. Half of perimeter

$$= l + w = 100 \div 2 = 50 \text{ cm}$$

2. The rectangle dimensions can be



[Answers may vary]

Answers of multiple choice questions

1. C 2. B 3. D 4. A
 5. C 6. C 7. B 8. C
 9. C

Exercise 18

1. a. $A = l \times w = 9 \times 3 = 27 \text{ cm}^2$
 b. $A = s \times s = 6 \times 6 = 36 \text{ cm}^2$

c. $A = s \times s = 5 \times 5 = 25 \text{ km}^2$

d. $A = l \times w = 18 \times 10 = 180 \text{ m}^2$

e. $A = l \times w = 8 \times 6 = 48 \text{ mm}^2$

f. $A = l \times w = 12 \times 4 = 48 \text{ cm}^2$

2. a. Area = $4 \times 6 = 24 \text{ cm}^2$

Perimeter = $2 \times (4 + 6)$

$= 2 \times 10 = 10 + 10$

$= 20 \text{ cm}$

b. Area = $5 \times 3 = 15 \text{ cm}^2$

Perimeter = $2 \times (5 + 3)$

$= 2 \times 8 = 16 \text{ cm}$

c. Area = $9 \times 9 = 81 \text{ m}^2$

Perimeter = $4 \times 9 = 36 \text{ m}$

3. a. side length, itself

b. 16 m^2 c. 36

d. 64 e. 49

f. 81 g. 24 cm^2

h. 24 i. 15 cm^2

j. 80 mm^2

4. $A = 5 \times 10 = 50 \text{ cm}^2$

5. $A = 25 \times 10 = 250 \text{ m}^2$

6. The area = $9 \times 5 = 45 \text{ cm}^2$

7. $A = 4 \times 4 = 16$ square meters

8. $A = 5 \times 5 = 25 \text{ m}^2$

9.

The area of the glass = $8 \times 8 = 64 \text{ cm}^2$

10.

The area = $3 \times 3 = 9 \text{ m}^2$

11.

The area of the garden = $7 \times 5 = 35 \text{ m}^2$

12.

The area of the glass = $8 \times 6 = 48 \text{ m}^2$

13.

The area of the ant farm = 20×8

$= 160 \text{ cm}^2$

14.

The area of the ground = $4 \times 4 = 16 \text{ m}^2$

15.

Area of rectangle = $7 \times 5 = 35 \text{ cm}^2$

, area of square = $6 \times 6 = 36 \text{ cm}^2$

So, the greater in area is the square.

16.

First:



$A = 9 \times 4 = 36$ square carpet tiles

$P = 2 \times (9 + 4) = 2 \times 13$

$= 2 \times (10 + 3) = [2 \times 10] + [2 \times 3]$

$= 20 + 6 = 26$ units

[Answers may vary]

Second :


 $A = 6 \times 6 = 36$ square carpet tiles

 $P = 4 \times 6 = 24$ units

(Answers may vary)

17. Length = 12 cm or 8 cm

Explanation :

Area	Length	Width	Perimeter
$24 = 24 \times 1$	24	1	$(24 + 1) \times 2 = 25 \times 2 = 50 > 30$
$24 = 12 \times 2$	12	2	$(12 + 2) \times 2 = 14 \times 2 = 28$
$24 = 8 \times 3$	8	3	$(8 + 3) \times 2 = 11 \times 2 = 22$
$24 = 6 \times 4$	6	4	$(6 + 4) \times 2 = 10 \times 2 = 20$

Answers of multiple choice questions

1. C 2. A 3. C
 4. A 5. D 6. D
 7. A 8. A 9. B
 10. D

Exercise 19

1. a. $x = 15 \div 5 = 3$ cm
 b. $x = 50 \div 10 = 5$ units
 c. $x = 99 \div 11 = 9$ m
2. a. $x = [24 \div 2] - 8$
 $= 12 - 8 = 4$ cm
 b. $x = [26 \div 2] - 5$
 $= 13 - 5 = 8$ units

$$\begin{aligned} \text{c. } x &= [44 \div 2] - 15 \\ &= 22 - 15 = 7 \text{ m} \end{aligned}$$

3. a. $y = 4$ m because : $4 \times 4 = 16$
 b. $y = 7$ cm because : $7 \times 7 = 49$
 c. $y = 10$ cm because : $10 \times 10 = 100$
4. a. $y = 20 \div 4 = 5$ cm
 b. $y = 12 \div 4 = 3$ km
 c. $y = 44 \div 4 = 11$ m

5. a. 5 b. 6 c. 7
 d. 10 cm e. 9 f. 5
 g. 7 km h. 16 i. 9
 j. 5 k. 7 km l. 28 m
 m. 9 cm n. 63 m^2

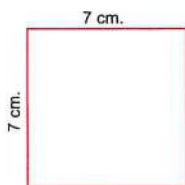
6. a. 50 cm^2 , 30 cm
 b. 2 m , 14 m
 c. 8 km , 34 km
 d. 5 dm , 30 dm^2
 e. 7 mm , 14 mm^2

7. a. 81 m^2 , 36 m
 b. 8 cm , 32 cm
 c. 6 mm , 36 mm^2

8. $l = A \div w = 28 \div 4 = 7$ cm
 $P = 2 \times [L + w] = 2 \times [7 + 4] = 2 \times 11$
 $= 22$ cm

9.

$$\begin{aligned} l &= w = 7 \text{ cm} \\ \text{because } 7 \times 7 \\ &= 49 \end{aligned}$$



10.

$$\begin{aligned} l &= [P \div 2] - w = [26 \div 2] - 6 = 13 - 6 \\ &= 7 \text{ m} \end{aligned}$$

$$A = l \times w = 7 \times 6 = 42 \text{ m}^2$$

11.

$$\begin{aligned} s &= P \div 4 = 40 \div 4 = 10 \text{ m} \\ A &= s \times s = 10 \times 10 = 100 \text{ m}^2 \end{aligned}$$

12.

$$\begin{aligned} l &= 6 + 2 = 8 \text{ m} \\ A &= l \times w = 8 \times 6 = 48 \text{ m}^2 \\ P &= 2 \times [l + w] = 2 \times [8 + 6] = 2 \times 14 \\ &= 14 + 14 = 28 \text{ m} \end{aligned}$$

13.

$$\begin{aligned} \text{Width of the rectangle} &= A \div l = 36 \div 9 \\ &= 4 \text{ cm} \end{aligned}$$

$$\begin{aligned} \text{Side length of the square} &= 6 \text{ cm} \\ [\text{because } 6 \times 6 = 36] \end{aligned}$$

$$\begin{aligned} P[\text{rectangle}] &= 2 \times [l + w] \\ &= 2 \times [9 + 4] = 2 \times 13 \\ &= 13 + 13 = 26 \text{ cm} \end{aligned}$$

$$P[\text{square}] = s \times 4 = 6 \times 4 = 24 \text{ cm}$$

So, the rectangle has the greater perimeter.

Answers of multiple choice questions

- | | | |
|-------|-------|------|
| 1. B | 2. B | 3. B |
| 4. C | 5. A | 6. D |
| 7. C | 8. A | 9. C |
| 10. D | 11. D | |

Exercise 20

- $A = 19 \text{ m}^2$, $P = 22 \text{ m}$
 - $A = 276 \text{ m}^2$, $P = 84 \text{ m}$
 - $A = 33 \text{ cm}^2$, $P = 28 \text{ cm}$
 - $A = 41 \text{ cm}^2$, $P = 28 \text{ cm}$
 - $A = 46 \text{ m}^2$, $P = 30 \text{ m}$
 - $A = 40 \text{ cm}^2$, $P = 36 \text{ cm}$

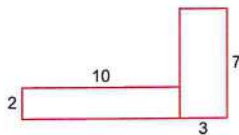
$$2. A = 24 \text{ cm}^2$$

$$3. A = 38 \text{ cm}^2$$

$$4. A = 84 \text{ cm}^2, P = 46 \text{ cm}$$

5.

$$\begin{aligned} A &= 20 + 21 \\ &= 41 \text{ cm}^2 \\ P &= 40 \text{ cm} \end{aligned}$$



Answers of multiple choice questions

- | | | |
|------|------|------|
| 1. B | 2. C | 3. A |
| 4. C | 5. D | 6. C |
| 7. B | | |

Unit 4 Assessment

1. 1. A 2. C 3. D
4. C 5. C 6. C
7. D

2. 1. 22 2. 49 3. 4
4. $2 \times l$, $2 \times w$ 5. 20
6. 27 7. 5 8. 36

3. 1. C 2. D 3. A
4. D 5. B 6. C
7. C

4.

1. The area = $7 \times 4 = 28 \text{ m}^2$

2. $P = 4 \times 7 = 28 \text{ m}$

$A = 7 \times 7 = 49 \text{ m}^2$

3. First rectangle :

$A = l \times w = 6 \times 3 = 18 \text{ cm}^2$

Second rectangle :

$A = 18 \text{ cm}^2$, $w = 2 \text{ cm}$

$l = A \div w = 18 \div 2 = 9 \text{ cm}$

$x = 9 \text{ cm}$

4. The length of the fence

$= 4 + 7 + 5 + 6 + 9 + 13 = 44 \text{ m}$

The cost = $44 \times 10 = 440 \text{ L.E.}$

ANSWERS OF

UNIT **5**

Multiplication as a Relationship

- **Concept 1** : Multiplicative Comparisons
- **Concept 2** : Properties and Patterns of Multiplication



Exercise 21

1.

a. $5 \times 7 = 35$

b. $4 \times 4 = 16$

c. $2 \times 8 = 16$

d. $9 \times 3 = 27$

e. $6 \times 2 = 12$

f. 3

2.

a. $3 \times 6 = 18$

b. $7 \times 2 = 14$

c. $5 \times 5 = 25$

d. $4 \times 2 = 8$

e. $4 \times 9 = 36$

f. $8 \times 4 = 32$

g. $5 \times 8 = 40$

h. $5 \times 5 = 25$

i. $6 \times 9 = 54$

3.

a. Five $\left[\begin{array}{|c|c|c|c|c|} \hline 3 & 3 & 3 & 3 & 3 \\ \hline \end{array} \right], 15 = 5 \times 3$

b. Four $\left[\begin{array}{|c|c|c|c|} \hline 7 & 7 & 7 & 7 \\ \hline \end{array} \right], 28 = 4 \times 7$

c. Three $\left[\begin{array}{|c|c|c|} \hline 9 & 9 & 9 \\ \hline \end{array} \right], 27 = 3 \times 9$

d. Five $\left[\begin{array}{|c|c|c|c|c|} \hline 2 & 2 & 2 & 2 & 2 \\ \hline \end{array} \right], 10 = 5 \times 2$

e. Four $\left[\begin{array}{|c|c|c|c|} \hline 3 & 3 & 3 & 3 \\ \hline \end{array} \right], 12 = 4 \times 3$

f. Three $\left[\begin{array}{|c|c|c|} \hline 6 & 6 & 6 \\ \hline \end{array} \right], 18 = 3 \times 6$

g. Four $\left[\begin{array}{|c|c|c|c|} \hline 6 & 6 & 6 & 6 \\ \hline \end{array} \right], 24 = 4 \times 6$

h. Five $\left[\begin{array}{|c|c|c|c|c|} \hline 7 & 7 & 7 & 7 & 7 \\ \hline \end{array} \right], 35 = 5 \times 7$

i. 9

j. 3

k. 56

l. 9

m. 4

n. 4

o. 2

4.

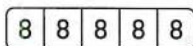
a. 20, 4

b. 24, 3

c. 24, 8

d. 48, 8

5.



Hany has 8 photos.

Answers of multiple choice questions

1. A

2. A

3. A

4. D

5. C

6. D

7. A

8. B

9. B

10. C

11. B

12. B

13. B

14. B

Exercise 22

1.

a. $s = 7 \times 2$

b. $2 \times 7 = a$

c. $18 = 6 \times m$

d. $4 \times 3 = b$

e. $24 = 4 \times h$

f. $25 = 5 \times y$

g. $30 = 5 \times d$

h. $7 \times 4 = m$

i. $6 \times k = 48$

j. $27 = b \times 9$

k. $6 = a \times 2$

l. $8 \times c = 24$

m. $5 \times m = 15$

2.

a. $y = 50$

b. $a = 15 \div 3 = 5$

c. $b = 21 \div 7 = 3$

d. $x = 12$

e. $b = 50 \div 5 = 10$

f. $m = 16 \div 4 = 4$

g. $z = 5$

h. $n = 18 \div 2 = 9$

i. $k = 35 \div 5 = 7$

3.

- a. Let the number of marbles collected in May be x
Equation : $x = 4 \times 5$
- b. Let the number of cookies of Ahmed be m
Equation : $12 = 3 \times m$
- c. Let the number of times be n
Equation : $n \times 7 = 21$
- d. Let the number of times Aya ran be a
Equation : $a = 2 \times 4$
- e. Let the number of times Sherif has be y
Equation : $18 = y \times 6$
- f. Let the number of sold salads be b
Equation : $b = 8 \times 4$
- g. Let the number of sold dogs be k
Equation : $k = 6 \times 2$

4.

- a. Equation : $5 \times 6 = a$
Answer : $a = 30$
The number is 30
- b. Equation : $36 = 4 \times m$
Answer : $m = 36 \div 4 = 9$
The number is 9
- c. Equation : $3 \times 4 = b$
Answer : $b = 12$
The number of figs the older brother ate is 12

d. Equation : $n \times 5 = 25$

Answer : $25 \div 5 = 5$

Mona sent 5 times as many as Esslam

e. Equation : $8 \times 6 = x$

Answer : $x = 48$

Wael uses 48 oranges

f. Equation : $4 \times 3 = z$

Answer : $z = 12$

Nora has 12 pounds

5.

a. Equation : $6 = a \times 2$

Answer : $a = 6 \div 2 = 3$

b. Equation : $36 = n \times 6$

Answer : $n = 36 \div 6 = 6$

c. Equation : $48 = b \times 4$

Answer : $b = 48 \div 4 = 12$

d. Equation : $48 = m \times 6$

Answer : $m = 48 \div 6 = 8$

e. Equation : $36 = h \times 4$

Answer : $h = 36 \div 4 = 9$

6.

What Marwan sold = $3 \times 9 = 27$ bars

Esslam sold = $27 - 9 = 18$ bars

Answers of multiple choice questions

1. D

2. D

3. B

4. B

5. A

6. C

7. A

8. B

9. D

10. D

11. B

12. C

Properties and Patterns of Multiplication

Exercise 23

1.

- a. 7 b. 6 c. 25
d. 48 e. 11 f. 25
g. 15 h. 9, 3 i. 5, 4
j. 5, 5 [Answers may vary]

2.

- a. $a = 33$ b. $b = 8$ c. $a = 8$
d. $b = 5$ e. $a = 7$ f. $b = 93$
g. $k = 11$ h. $m = 100$ i. $n = 7$
j. $a = 1$

3.

- a. 5 b. 12 c. 672
d. 0 e. 0 f. 0
g. 0 h. 356 i. 0

4.

- a. 80 b. 500 c. 3,000
d. 2,000 e. 100 f. 100
g. 1,000 h. 100 i. 12,300
j. 100

5.

Badr solution's = $6 \times 7 = 42$

Salma solution's = $7 \times 6 = 42$

, because $6 \times 7 = 7 \times 6 = 42$

So, the two solutions are correct.

6.

- $$3 \times 8 = 8 \times 3 = 24$$
- $$4 \times 6 = 6 \times 4 = 24 \text{ [Answers may vary]}$$

7.

$$5 \times 4 = 4 \times 5 = 20$$

$$2 \times 10 = 10 \times 2 = 20 \text{ [Answers may vary]}$$

8. $8 \times 6 = 6 \times 8 = 48$

- [illegible]

9.

Tarek says that $9 \times 1,000 = 900$

and the correct is $9 \times 100 = 900$

or $9 \times 1,000 = 9,000$

10.

- a. $a = 0$** **b. $a = 19, b = 112$**

Answers of multiple choice questions

1. B
2. D
3. D
4. C
5. C
6. A
7. B
8. C
9. A
10. C
11. A
12. A
13. B
14. B

Exercise 24

1.

- a. 5 b. 10 c. 5
d. 3 e. 2 f. 3

2.

- a. $6 \times 4 = 24$ b. $10 \times 3 = 30$
 c. $2 \times 12 = 24$ d. $5 \times 6 = 30$
 e. $12 \times 3 = 36$ f. $9 \times 6 = 54$
 g. $8 \times 30 = 240$ h. $20 \times 7 = 140$

3.

- a. $3 \times [2 \times 5] = 3 \times 10 = 30$
 b. $4 \times [6 \times 2] = 4 \times 12 = 48$
 c. $2 \times 3 \times 9 = [2 \times 3] \times 9 = 6 \times 9 = 54$
 d. $[3 \times 2] \times 3 = 6 \times 3 = 18$
 e. $[4 \times 3] \times 7 = 12 \times 7 = 84$
 f. $[4 \times 5] \times 6 = 20 \times 6 = 120$
 g. $[2 \times 5] \times 8 = 10 \times 8 = 80$
 h. $3 \times [4 \times 5] = 3 \times 20 = 60$
 i. $[3 \times 3] \times 7 = 9 \times 7 = 63$
 j. $[2 \times 2] \times 9 = 4 \times 9 = 36$

4.

- a. $[5 \times 4] \times 2 = 20 \times 2 = 40$
 $5 \times [4 \times 2] = 5 \times 8 = 40$
 b. $[3 \times 6] \times 2 = 18 \times 2 = 36$
 $3 \times [6 \times 2] = 3 \times 12 = 36$
 c. $[2 \times 3] \times 4 = 6 \times 4 = 24$
 $2 \times [3 \times 4] = 2 \times 12 = 24$
 d. $[8 \times 5] \times 10 = 40 \times 10 = 400$
 $8 \times [5 \times 10] = 8 \times 50 = 400$

5.

- a. 3 b. 8 c. 16
 d. 14 e. 12 f. 11
 g. 6 h. 5 i. 2
 j. 9

6.

- a. 4 b. 2 c. 7
 d. 3 e. 5 f. 9
 g. 11 h. 5

7.

- a. $7 \times [2 \times 10] = [7 \times 2] \times 10 = 14 \times 10$
 $= 140$
 b. $5 \times [5 \times 10] = [5 \times 5] \times 10 = 25 \times 10$
 $= 250$
 c. $4 \times [7 \times 100] = [4 \times 7] \times 100$
 $= 28 \times 100 = 2,800$
 d. $3 \times [4 \times 1,000] = [3 \times 4] \times 1,000$
 $= 12 \times 1,000 = 12,000$
 e. $9 \times [5 \times 100] = [9 \times 5] \times 100$
 $= 45 \times 100 = 4,500$

8.

- a. $[100 \times 2] \times 3 = 100 \times [2 \times 3] = 100 \times 6$
 $= 600$
 b. $[100 \times 5] \times 7 = 100 \times [5 \times 7] = 100 \times 35$
 $= 3,500$
 c. $[100 \times 6] \times 3 = 100 \times [6 \times 3] = 100 \times 18$
 $= 1,800$
 d. $6 \times [9 \times 10] = [6 \times 9] \times 10 = 54 \times 10$
 $= 540$
 e. $[1,000 \times 7] \times 6 = 1,000 \times [7 \times 6]$
 $= 1,000 \times 42 = 42,000$
 f. $600 \times 4 = 2,400$
 g. $4,000 \times 5 = 20,000$

9.

$$\begin{aligned}\text{Aisha bought} &= 3 \times 3 \times 4 = [3 \times 3] \times 4 \\ &= 9 \times 4 = 36 \text{ bottles.}\end{aligned}$$

10.

$$\begin{aligned}\text{Hany makes} &= 20 \times 6 \times 2 \\ &= 20 \times [6 \times 2] = 20 \times 12 \\ &= \text{L.E. } 240\end{aligned}$$

11.

$$\begin{aligned}\text{Angy runs} &= 2 \times 5 \times 10 = [2 \times 5] \times 10 \\ &= 10 \times 10 \\ &= 100 \text{ kilometers}\end{aligned}$$

12.

Heba and Ashraf multiplied the same factors but in different order.

[Choose the strategy your prefer]

13.

$$\begin{aligned}2 \times 7 \times 4 &= [2 \times 7] \times 4 = 14 \times 4 \\ 2 \times 7 \times 4 &= 2 \times 4 \times 7 \text{ [Commutative property]} \\ &= [2 \times 4] \times 7 \text{ [Associative property]} \\ &= 8 \times 7 = 56 \\ \text{So, } 14 \times 4 &= 56\end{aligned}$$

14.

$$\begin{aligned}\text{What he saves every day} &= 5 - 3 = \text{L.E. } 2\end{aligned}$$

What he saves in 10 weeks

$$\begin{aligned}&= 2 \times 5 \times 10 = [2 \times 5] \times 10 = 10 \times 10 \\ &= \text{L.E. } 100\end{aligned}$$

Answers of multiple choice questions

- | | | |
|-------|-------|------|
| 1. B | 2. B | 3. B |
| 4. C | 5. C | 6. C |
| 7. D | 8. D | 9. A |
| 10. A | 11. B | |

Unit 5 Assessment

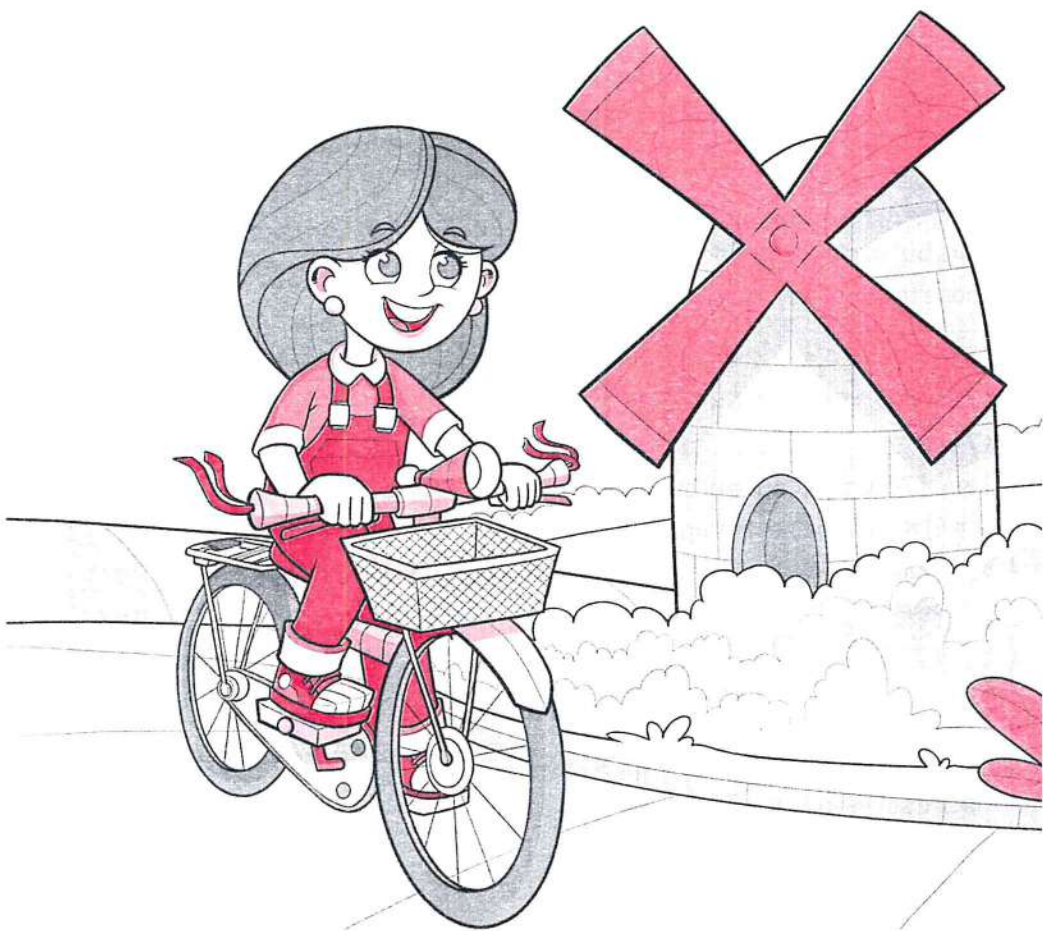
- 1.**
- | | | |
|------|------|------|
| 1. A | 2. B | 3. C |
| 4. A | 5. C | 6. D |
| 7. B | | |
- 2.**
- | | | |
|-------|----------------------|-------|
| 1. 21 | 2. $5 \times 8 = 40$ | 3. 1 |
| 4. 32 | 5. Commutative | 6. 63 |
| 7. 3 | 8. 35 | |
- 3.**
- | | | |
|------|------|------|
| 1. C | 2. A | 3. D |
| 4. B | 5. C | 6. C |
| 7. B | | |
- 4.**
- His brother ate $= 4 \times 3 = 12$ figs
 - Hany bought $= 3 \times 3 \times 4 = [3 \times 3] \times 4$
 $= 9 \times 4 = 36$ bottles
 - A. $[3 \times 2] \times 4 = 6 \times 4 = 24$
 B. $5 \times 7 \times 2 = 5 \times 2 \times 7 = [5 \times 2] \times 7$
 $= 10 \times 7 = 70$
 - A. $m = 1,000$ B. $m = 7$
 C. $m = 9$ D. $m = 0$

ANSWERS OF

UNIT **6**

Factors and Multiples

- **Concept 1** : Understanding Factors
- **Concept 2** : Understanding Multiples



Exercise 25

First : Exercises on factors

1.

	Number	Is 2 a factor?	Is 5 a factor?	Is 10 a factor?
a.	26	(Yes) No	Yes (No)	Yes (No)
b.	70	(Yes) No	(Yes) No	(Yes) No
c.	15	Yes (No)	(Yes) No	Yes (No)
d.	17	Yes (No)	Yes (No)	Yes (No)

2.

- a. 5 b. 2, 5, 10
c. 2 d. 5
e. 1, 2, 4, 8 f. 1, 2, 4, 5, 10

3.

- a. is a factor of b. is not a factor of
c. is a factor of d. is a factor of
e. is a factor of f. is a factor of
g. is a factor of h. is a factor of
i. is a factor of j. is a factor of

4.

- a. No, because 23 is an odd number
b. yes, because the ones digit in 35 is 5
c. yes, because $84 \div 12 = 7$ and 12 is exiting when skip counting be 3s
d. No, because $5 + 3 = 8$ and 8 does not exist when skip counting by 3s

- e. Yes, because the number exists when skip counting by 4s
f. No, because the number does not exist when skip counting by 7s
g. Yes, because $6 + 3 = 9$ and 9 is existing when skip counting by 9s

5.

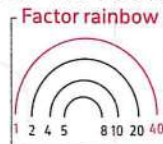
- a. 1, 2, 4, 5, 10 and 20



Factor T-chart

1	20
2	10
4	5

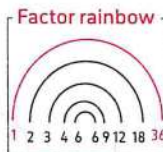
- b. 1, 2, 4, 5, 8, 10, 20, 40



Factor T-chart

1	40
2	20
4	10
5	8

- c. 1, 2, 3, 4, 6, 9, 12, 18 and 36



Factor T-chart

1	36
2	18
3	12
4	9
6	6

6.

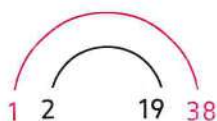
- a. 1, 2, 3 and 6

1	6
2	3

- b. 1, 2, 5 and 10

1	10
2	5

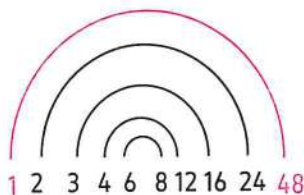
c. 1, 2, 19 and 38



d. 1, 5 and 25



e. 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48



f. 1, 3, 7 and 21



g. 1 and 19



h. 1, 5, 7 and 35



i. 1 and 13



j. 1, 7 and 49



7.

- a. 6 b. 28 c. 50
d. 24 e. 35

Second : Exercises on prime and composite numbers

8.

- a. prime b. composite
c. prime d. prime
e. prime f. composite
g. prime h. prime
i. prime j. composite
k. composite l. prime

9.

- a. 2 b. 2
c. 1, itself d. 2
e. 11 f. 61, 67
g. two, prime h. composite, 4

10.

- a. 1, 3, 5 and 15, composite
b. 1, 2, 3, 4, 6, 8, 12 and 24, composite.
c. 1 and 23, prime
d. 1 and 37, prime
e. 1, 2, 3, 6, 9 and 18, composite
f. 1, 2, 4, 8, 16 and 32, composite
g. 1, 3, 7 and 21, composite
h. 1, 2, 3, 4, 6 and 12, composite
i. 1, 2, 5, 10, 25 and 50, composite
j. 1, 2, 11 and 22, composite
k. 1 and 31, prime
l. 1, 2, 4, 11, 22 and 44, composite

11.

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

12.

Ashraf forgot to write 5

The correct answer is : 2, 3, 5, 7 and 11

13.

The numbers are : 47, 53, 59 and 61

14.

The numbers are : 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, 21 and 22

Answers of multiple choice questions

1. D 2. C 3. B
 4. C 5. D 6. B
 7. D 8. B 9. B
 10. A 11. A 12. C
 13. C 14. B 15. C
 16. B

Exercise 26

1.

- a. Factors of 16 : 1, 2, 4, 8, 16
 Factors of 20 : 1, 2, 4, 5, 10, 20

- b. Factors of 18 : 1, 2, 3, 6, 9, 18

Factors of 4 : 1, 2, 4

- c. Factors of 20 : 1, 2, 4, 5, 10, 20

Factors of 30 : 1, 2, 3, 5, 6, 10, 15, 30

- d. Factors of 17 : 1, 17

Factors of 22 : 1, 2, 11, 22

- e. Factors of 21 : 1, 3, 7, 21

Factors of 35 : 1, 5, 7, 35

- f. Factors of 36 : 1, 2, 3, 4, 6, 9, 12, 18, 36

Factors of 42 : 1, 2, 3, 6, 7, 14, 21, 42

2.

- a. 1, 2, 4 b. 1, 5
 c. 1, 17 d. 1, 2, 3, 6
 e. 1, 5 f. 1, 2, 11, 22

3.

- a. Factors of 4 : 1, 2, 4

Factors of 6 : 1, 2, 3, 6

Common factors : 1, 2

GCF : 2

- b. Factors of 10 : 1, 2, 5, 10

Factors of 30 : 1, 2, 3, 5, 6, 10, 15, 30

Common factors : 1, 2, 5, 10

GCF : 10

- c. Factors of 12 : 1, 2, 3, 4, 6, 12

Factors of 18 : 1, 2, 3, 6, 9, 18

Common factors: 1, 2, 3, 6

GCF: 6

d. Factors of 6 are: 1, 2, 3, 6

Factors of 12 are: 1, 2, 3, 4, 6, 12

Common factors: 1, 2, 3, 6

GCF: 6

e. Factors of 10: 1, 2, 5, 10

Factors of 15: 1, 3, 5, 15

Common factors: 1, 5

GCF: 5

4.

a. Common factors: 1, 3, 5, 15

GCF: 15

b. Common factors: 1, 2, 3, 6

GCF: 6

c. Common factors: 1, 2, 5, 10

GCF: 10

d. Common factors: 1, 2, 5, 10

GCF: 10

e. Common factors: 1, 2

GCF: 2

f. Common factors: 1, 5

GCF: 5

g. Common factors: 1, 2, 4, 8

GCF: 8

h. Common factors: 1, 11

GCF: 11

i. Common factors: 1, 2, 4

GCF: 4

j. Common factors: 1, 2, 3, 6

GCF: 6

k. Common factors: 1, 2, 3, 6

GCF: 6

l. Common factors: 1, 3

GCF: 3

5.

a. Factors of 21: 1, 3, 7, 21

Factors of 14: 1, 2, 7, 14

Common factors: 1, 7

GCF: 7

The greatest number of groups is 7 groups of 3 pencils and 2 erasers in each group

b. Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40

Factors of 32: 1, 2, 4, 8, 16, 32

Common factors: 1, 2, 4, 8

GCF: 8

The greatest number of teams is 8 teams of 5 girls and 4 boys in each team

c. Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

Factors of 27: 1, 3, 9, 27

Common factors: 1, 3, 9

GCF: 9

The greatest number of groups is 9 groups of 4 girls and 3 boys in each group

d. Factors of 7: 1, 7

Factors of 14: 1, 2, 7, 14

Common factors: 1, 7

GCF: 7

The greatest number of flower arrangements is 7 arrangements of 1 rose and 2 daisies in each arrangement

e. Factors of 60: 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Common factors: 1, 2, 3, 4, 6, 12

GCF: 12

The greatest number of groups is 12 groups of 5 blue marbles and 2 red marbles in each group

f. Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36

Common factors: 1, 2, 3, 4, 6, 12

GCF: 12

The greatest number of packs is 12 of 2 apples and 3 bags of candy in each pack

Factors of 21: 1, 3, 7, 21

Common factors: 1, 3

GCF: 3

Answers of multiple choice questions

1. C

2. A

3. B

4. D

5. A, B

6. C

7. C

8. C

9. C

10. D

6.

Factors of 15: 1, 3, 5, 15

Factors of 18: 1, 2, 3, 6, 9, 18

Exercise 27

1.

a.



The multiples of 2 are :

0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, ...

b.



The multiples of 5 are :

0, 5, 10, 15, 20, 25, 30, 35, ...

2.

a.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 9 are :

9, 18, 27, 36, 45, 54, 63, 72, 81, 90, 99

b.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 10 are :

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

3.

- a. 12, 6, 24, 18 b. 6, 21, 15, 36
c. 8, 16, 24, 32 d. 30
e. 31, 16

4.

- a. 7, 14, 21, 28, 35 [Answers may vary]
b. 8, 16, 24, 32, 40 [Answers may vary]
c. 0, 3, 6, 9, 12, 15, 18
d. 0, 5, 10, 15, 20, 25, 30
e. 0, 9, 18, 27, 36, 45, 54

5.

- a. 20 b. 32 c. 30
d. 90 e. 18 f. 33
g. 45 h. 7 i. 18

6.

- a. The multiples of 2 are :
0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
The multiples of 3 are :
0, 3, 6, 9, 12, 15, 18
The common multiples are :
0, 6, 12, 18
b. The multiples of 5 are :
0, 5, 10, 15, 20, 25, 30
The multiples of 4 are :
0, 4, 8, 12, 16, 20, 24, 28
The common multiples are : 0, 20

7.

- a. 8 b. 21 c. 18 , 36
d. 24 , 48 e. 35 , 70 f. 28 , 56

[Answers may vary]

8.

Nagwa will visit her grandparents on :
May 4 , 8 , 12 , 16 , 20 , 24 and 28

The number of visits is : 7 times

9.



Tahani will walk 2 km

10.

- a. 30 , 60 b. 60 , 120
[Answers may vary]

Answers of multiple choice questions

1. A 2. B 3. B
4. C 5. A 6. A
7. D 8. A 9. D
10. A 11. D 12. B , D

Exercise 28

1.

- a. 5 , 10 , 15 [Answers may vary]
b. 6 , 12 , 18 [Answers may vary]
c. 2 , 3 , 10 [Answers may vary]
d. 27

e. 36 , 4 , 9 , 4 , 9 , 36

f. 21 , 21 , 3 , 7

2.

- a. yes b. yes c. yes
d. yes e. no f. no
g. yes h. no
i. a factor of 25 j. a multiple of 8
k. a factor of 9 l. 7

3.

- a. 3 is a factor of 6
6 is a factor of 12
12 is a multiple of 3
[Answers may vary]

- b. 8 is a multiple of 4
16 is a multiple of 8
4 is factor of 24
[Answers may vary]

- c. $2 \times 2 = 4$, $3 \times 4 = 12$
 , then all numbers are factors of 12
4 is a multiple of 2
12 is a multiple of 3
[Answers may vary]

4.

- a. 45 [Answers may vary]
b. 16
c. 12 [Answers may vary]
d. 28

5.

Multiples of 4 : 12 , 16

Factors of 24 : 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24

The number is : 12

Answers of multiple choice questions

- | | | |
|------|------|------|
| 1. B | 2. A | 3. A |
| 4. C | 5. C | 6. D |
| 7. A | 8. B | 9. C |

Unit 6 Assessment

1.

- | | | |
|------|------|------|
| 1. A | 2. C | 3. C |
| 4. D | 5. A | 6. C |
| 7. B | | |

2.

- | | | |
|------|------|------|
| 1. 1 | 2. 0 | 3. 2 |
| 4. 2 | 5. 5 | 6. 3 |
| 7. 7 | 8. 6 | |

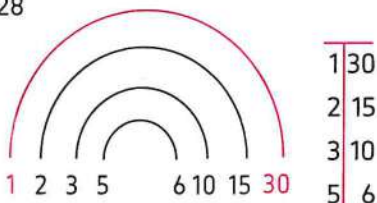
3.

- | | | |
|------|------|------|
| 1. A | 2. D | 3. C |
| 4. B | 5. D | 6. B |
| 7. C | | |

4.

1. 28

2.



Factors of 30 : 1 , 2 , 3 , 5 , 6 , 10 , 15 , 30

3. Multiples of 8 : 0 , 8 , 16 , 24 , 32 , 40

Multiples of 12 : 0 , 12 , 24 , 36

Common multiples : 0 , 24

4. Factors of 24 : 1 , 2 , 3 , 4 , 6 , 8 , 12 , 24

Factors of 40 : 1 , 2 , 4 , 5 , 8 , 10 , 20 , 40

Common factors : 1 , 2 , 4 , 8

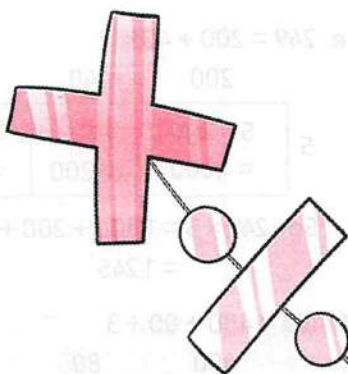
GCF : 8

ANSWERS OF

UNIT 7

Multiplication and Division : Computation and Relationships

- **Concept 1 :** Multiplying by 1-Digit and 2-Digit Factors
- **Concept 2 :** Dividing by 1-Digit Divisors



Concept 1

Multiplying by 1-Digit and 2-Digit Factors

Exercise 29

1.

a.



Tens	Ones
6	8

6 tens

8 ones

$$17 \times 4 = 68$$

b.



Tens	Ones
6	3

6 tens

3 ones

$$21 \times 3 = 63$$

c.

Tens	Ones
7	0

7 tens

$$14 \times 5 = 70$$

2.

a. $32 = 30 + 2$

30

2

7

$7 \times 30 = 210$	$7 \times 2 = 14$
---------------------	-------------------

$$\text{So, } 7 \times 32 = 210 + 14 = 224$$

b. $88 = 80 + 8$

80

8

6

$6 \times 80 = 480$	$6 \times 8 = 48$
---------------------	-------------------

$$\text{So, } 88 \times 6 = 480 + 48 = 528$$

c. $91 = 90 + 1$

90

1

4

$4 \times 90 = 360$	$4 \times 1 = 4$
---------------------	------------------

$$\text{So, } 91 \times 4 = 360 + 4 = 364$$

d. $35 = 30 + 5$

30

5

7

$7 \times 30 = 210$	$7 \times 5 = 35$
---------------------	-------------------

$$\text{So, } 35 \times 7 = 210 + 35 = 245$$

e. $249 = 200 + 40 + 9$

200

40

9

5

5×200 $= 1,000$	5×40 $= 200$	5×9 $= 45$
-----------------------------	--------------------------	------------------------

$$\text{So, } 249 \times 5 = 1,000 + 200 + 45 = 1,245$$

f. $483 = 400 + 80 + 3$

400

80

3

5

5×400 $= 2,000$	5×80 $= 400$	5×3 $= 15$
-----------------------------	--------------------------	------------------------

$$\text{So, } 5 \times 483 = 2,000 + 400 + 15 = 2,415$$

g. $723 = 700 + 20 + 3$

700

20

3

7

7×700 $= 4,900$	7×20 $= 140$	7×3 $= 21$
-----------------------------	--------------------------	------------------------

$$\text{So, } 7 \times 723 = 4,900 + 140 + 21 = 5,061$$

h. $530 = 500 + 30$

	500	30
7	7×500 $= 3,500$	7×30 $= 210$

So, $530 \times 7 = 3,500 + 210 = 3,710$

i. $4,734 = 4,000 + 700 + 30 + 4$

	4,000	700	30	4
5	$5 \times 4,000$ $= 20,000$	5×700 $= 3,500$	5×30 $= 150$	5×4 $= 20$

So, $4,734 \times 5 = 20,000 + 3,500 + 150 + 20 = 23,670$

j. $2,391 = 2,000 + 300 + 90 + 1$

	2,000	300	90	1
8	$8 \times 2,000$ $= 16,000$	8×300 $= 2,400$	8×90 $= 720$	8×1 $= 8$

So, $2,391 \times 8 = 16,000 + 2,400 + 720 + 8 = 19,128$

d. $3 \times (600 + 80 + 4) = (3 \times 600)$

$$+ (3 \times 80) + (3 \times 4)$$

$$= 1,800 + 240 + 12$$

$$= 2,052$$

e. $5 \times (100 + 30 + 5) = (5 \times 100)$

$$+ (5 \times 30) + (5 \times 5)$$

$$= 500 + 150 + 25$$

$$= 675$$

f. $8 \times (200 + 10 + 4) = (8 \times 200)$

$$+ (8 \times 10) + (8 \times 4)$$

$$= 1,600 + 80 + 32$$

$$= 1,712$$

g. $3 \times (1,000 + 400 + 70 + 6)$

$$= (3 \times 1,000) + (3 \times 400) + (3 \times 70)$$

$$+ (3 \times 6) = 3,000 + 1,200 + 210 + 18$$

$$= 4,428$$

h. $9 \times (4,000 + 500 + 20 + 3)$

$$= (9 \times 4,000) + (9 \times 500) + (9 \times 20)$$

$$+ (9 \times 3) = 36,000 + 4,500 + 180$$

$$+ 27 = 40,707$$

i. $4 \times (9,000 + 30 + 5)$

$$= (4 \times 9,000) + (4 \times 30) + (4 \times 5)$$

$$= 36,000 + 120 + 20 = 36,140$$

j. $8 \times (2,000 + 500 + 60)$

$$= (8 \times 2,000) + (8 \times 500) + (8 \times 60)$$

$$= 16,000 + 4,000 + 480 = 20,480$$

3.

a. $8 \times (30 + 5) = (8 \times 30) + (8 \times 5)$

$$= 240 + 40 = 280$$

b. $7 \times (60 + 8) = (7 \times 60) + (7 \times 8)$

$$= 420 + 56 = 476$$

c. $2 \times (700 + 20 + 4) = (2 \times 700)$

$$+ (2 \times 20) + (2 \times 4)$$

$$= 1,400 + 40 + 8$$

$$= 1,448$$

4.

a. 15

b. 1,230

c. 17

e. 100, 30

g. 1,000, 800, 5

i. 6

	200	40	6
5	1,000	200	30

d. 60

f. 7,000, 40

h. 592

5.

58×9

$58 = 50 + 8$

So, $58 \times 9 = 450 + 72 = 522$ km

	50	8
9	50×9 $= 450$	8×9 $= 72$

6.

a. The money which she paid
 $= 13 \times 6 = 78$ L.E.

b. Number of candy pieces
 $= 15 \times 9 = 135$ candy pieces

c. $6 \times 145 = 6 \times [100 + 40 + 5]$
 $= [6 \times 100] + [6 \times 40] + [6 \times 5]$
 $= 600 + 240 + 30$
 $= 870$ pounds

d. $22 \times 5 = [20 + 2] \times 5$
 $= [20 \times 5] + [2 \times 5]$
 $= 100 + 10$
 $= 110$ passengers

e. $1,280 \times 3 = [1,000 + 200 + 80] \times 3$
 $= [1,000 \times 3] + [200 \times 3]$
 $+ [80 \times 3]$
 $= 3,000 + 600 + 240$
 $= 3,840$ centimeters

7.

The student decomposed 36 as $3 + 6$ and that is wrong

36 decomposed as $30 + 6$

	30	6
8	$8 \times 30 = 240$	$8 \times 6 = 48$

So, $36 \times 8 = 240 + 48 = 288$

Answers of multiple choice questions

1. A

2. A

3. D

4. C

5. B

6. C

7. C

8. C

9. A

10. C

11. D

12. D

13. B

Exercise 30

1.

$$\begin{array}{r} 28 \\ \times 6 \\ \hline 120 \quad [20 \times 6] \\ + 48 \quad [8 \times 6] \\ \hline 168 \end{array}$$

$$\begin{array}{r} 239 \\ \times 7 \\ \hline 1,400 \quad [200 \times 7] \\ + 210 \quad [30 \times 7] \\ + 63 \quad [9 \times 7] \\ \hline 1,673 \end{array}$$

c.

$$\begin{array}{r}
 2,523 \\
 \times \quad 5 \\
 \hline
 10,000 \quad [5 \times 2,000] \\
 + \quad 2,500 \quad [5 \times 500] \\
 + \quad 100 \quad [5 \times 20] \\
 + \quad 15 \quad [5 \times 3] \\
 \hline
 12,615
 \end{array}$$

d.

$$\begin{array}{r}
 6,421 \\
 \times \quad 6 \\
 \hline
 36,000 \quad [6 \times 6,000] \\
 + \quad 2,400 \quad [6 \times 400] \\
 + \quad 120 \quad [6 \times 20] \\
 + \quad 6 \quad [6 \times 1] \\
 \hline
 38,526
 \end{array}$$

2.

a.

$$\begin{array}{r}
 67 \\
 \times \quad 8 \\
 \hline
 480 \quad [8 \times 60] \\
 + \quad 56 \quad [8 \times 7] \\
 \hline
 536
 \end{array}$$

b.

$$\begin{array}{r}
 29 \\
 \times \quad 4 \\
 \hline
 80 \quad [4 \times 20] \\
 + \quad 36 \quad [4 \times 9] \\
 \hline
 116
 \end{array}$$

c.

$$\begin{array}{r}
 343 \\
 \times \quad 5 \\
 \hline
 1,500 \quad [5 \times 300] \\
 + \quad 200 \quad [5 \times 40] \\
 + \quad 15 \quad [5 \times 3] \\
 \hline
 1,715
 \end{array}$$

d.

$$\begin{array}{r}
 678 \\
 \times \quad 6 \\
 \hline
 3,600 \quad [6 \times 600] \\
 + \quad 420 \quad [6 \times 70] \\
 + \quad 48 \quad [6 \times 8] \\
 \hline
 4,068
 \end{array}$$

e.

$$\begin{array}{r}
 284 \\
 \times \quad 4 \\
 \hline
 16 \quad [4 \times 4] \\
 + \quad 320 \quad [4 \times 80] \\
 + \quad 800 \quad [4 \times 200] \\
 \hline
 1,136
 \end{array}$$

f.

$$\begin{array}{r}
 305 \\
 \times \quad 7 \\
 \hline
 35 \quad [7 \times 5] \\
 + \quad 0 \quad [7 \times 0] \\
 + \quad 2,100 \quad [7 \times 300] \\
 \hline
 2,135
 \end{array}$$

g.

$$\begin{array}{r}
 2,539 \\
 \times \quad 3 \\
 \hline
 6,000 \quad [3 \times 2,000] \\
 + \quad 1,500 \quad [3 \times 500] \\
 + \quad \quad 90 \quad [3 \times 30] \\
 + \quad \quad 27 \quad [3 \times 9] \\
 \hline
 7,617
 \end{array}$$

h.

$$\begin{array}{r}
 4,731 \\
 \times \quad 4 \\
 \hline
 4 \quad [4 \times 1] \\
 + \quad 120 \quad [4 \times 30] \\
 + \quad 2,800 \quad [4 \times 700] \\
 + \quad 16,000 \quad [4 \times 4,000] \\
 \hline
 18,924
 \end{array}$$

3.

a.

$$\begin{array}{r}
 30 \\
 \times \quad 7 \\
 \hline
 210
 \end{array}$$

b.

$$\begin{array}{r}
 \textcircled{2} 27 \\
 \times \quad 3 \\
 \hline
 81
 \end{array}$$

c.

$$\begin{array}{r}
 \textcircled{1} 123 \\
 \times \quad 4 \\
 \hline
 492
 \end{array}$$

d.

$$\begin{array}{r}
 \textcircled{1} \textcircled{4} 126 \\
 \times \quad 7 \\
 \hline
 882
 \end{array}$$

e.

$$\begin{array}{r}
 \textcircled{1} 630 \\
 \times \quad 5 \\
 \hline
 3,150
 \end{array}$$

f.

$$\begin{array}{r}
 204 \\
 \times \quad 2 \\
 \hline
 408
 \end{array}$$

g.

$$\begin{array}{r}
 \textcircled{2} \textcircled{2} 356 \\
 \times \quad 4 \\
 \hline
 1,424
 \end{array}$$

h.

$$\begin{array}{r}
 \textcircled{1} 1,390 \\
 \times \quad 2 \\
 \hline
 2,780
 \end{array}$$

i.

$$\begin{array}{r}
 \textcircled{1} 2,213 \\
 \times \quad 4 \\
 \hline
 8,852
 \end{array}$$

j.

$$\begin{array}{r}
 \textcircled{1} \textcircled{1} 2,450 \\
 \times \quad 3 \\
 \hline
 7,350
 \end{array}$$

4.

a.

$$\begin{array}{r}
 \text{Estimate} \\
 20 \\
 \times \quad 6 \\
 \hline
 120
 \end{array}$$

$$\begin{array}{r}
 \text{Answer} \\
 4 \\
 17 \\
 \times \quad 6 \\
 \hline
 102
 \end{array}$$

b.

$$\begin{array}{r}
 \text{Estimate} \\
 30 \\
 \times \quad 3 \\
 \hline
 90
 \end{array}$$

$$\begin{array}{r}
 \text{Answer} \\
 32 \\
 \times \quad 3 \\
 \hline
 96
 \end{array}$$

c.

$$\begin{array}{r}
 \text{Estimate} \\
 130 \\
 \times \quad 2 \\
 \hline
 260
 \end{array}$$

$$\begin{array}{r}
 \text{Answer} \\
 134 \\
 \times \quad 2 \\
 \hline
 268
 \end{array}$$

d.

$$\begin{array}{r}
 \text{Estimate} \\
 800 \\
 \times \quad 3 \\
 \hline
 2,400
 \end{array}$$

$$\begin{array}{r}
 \text{Answer} \\
 12 \\
 758 \\
 \times \quad 3 \\
 \hline
 2,274
 \end{array}$$

e.

$$\begin{array}{r}
 \text{Estimate} \\
 1,300 \\
 \times \quad 2 \\
 \hline
 2,600
 \end{array}$$

$$\begin{array}{r}
 \text{Answer} \\
 1 \\
 1,349 \\
 \times \quad 2 \\
 \hline
 2,698
 \end{array}$$

f. Estimate	Answer
$\begin{array}{r} 2,000 \\ \times 4 \\ \hline 8,000 \end{array}$	$\begin{array}{r} 1\ 12 \\ 2,327 \\ \times 4 \\ \hline 9,308 \end{array}$

5.

Student 2 solved the problem correctly, student 1 error was no regrouping 1 ten, while student 3 error was regrouping 1 ten with hundreds.

6.

- Number of candy pieces
 $= 15 \times 9 = 135$ candy pieces
- The maximum number of passengers
 $= 22 \times 5 = 110$ passengers
- The number of books $= 35 \times 5$
 $= 175$ books
- He paid $= 85 \times 4 = 340$ pounds
- They won $= 150 \times 6 = 900$ pounds
- Mohamed paid $= 5 \times 145$
 $= 725$ pounds
- They won $= 150 \times 5 = 750$ pounds
- The mass $= 124 \times 5 = 620$ kg
- Number of toys $= 4,256 \times 3$
 $= 12,768$ toys

7.

8, 8, because $3 \times 8 = 24$ and it's the only digit multiplied by 3 gives a number its ones digit is 4

Answers of multiple choice questions

- | | | |
|------|------|------|
| 1. B | 2. B | 3. B |
| 4. C | 5. A | 6. D |

7. C

8. C

9. C

10. C

Exercise 31

1.

- | | | |
|----------|----------|----------|
| a. 1,400 | b. 1,500 | c. 1,600 |
| d. 3,000 | e. 1,600 | f. 1,800 |
| g. 4,900 | h. 6,300 | i. 8,100 |
| j. 140 | k. 1,200 | l. 3,200 |
| m. 4,500 | n. 3,500 | o. 420 |
| p. 660 | q. 1,540 | r. 15 |
| s. 12 | t. 50 | u. 3 |

2.

- a. Problem :
- 40×62

Area model :

	60	2
40	$40 \times 60 = 2,400$	$40 \times 2 = 80$

Numbers and symbols : 2,480

- b. Problem :
- 70×55

Area model :

	50	5
70	$70 \times 50 = 3,500$	$70 \times 5 = 350$

Numbers and symbols : 3,850

- c. Problem :
- 54×30

Area model :

	50	4
30	$30 \times 50 = 1,500$	$30 \times 4 = 120$

Numbers and symbols : 1,620

d. Problem : 40×78

Area model :

	70	8
40	$40 \times 70 = 2,800$	$40 \times 8 = 320$

Numbers and symbols : 3,120

e. Problem : 44×20

Area model :

	40	4
20	$20 \times 40 = 800$	$20 \times 4 = 80$

Numbers and symbols : 880

f. Problem : 15×30

Area model :

	10	5
30	$30 \times 10 = 300$	$30 \times 5 = 150$

Numbers and symbols : 450

g. Problem : 10×40

Area model :

	40
10	$10 \times 40 = 400$

Numbers and symbols : 400

h. Problem : 72×40

Area model :

	70	2
40	$40 \times 70 = 2,800$	$40 \times 2 = 80$

Numbers and symbols : 2,880

3.

a. The price = 26×10

	20	6
10	$20 \times 10 = 200$	$10 \times 6 = 60$

$26 \times 10 = 200 + 60 = 260$ pounds

b. He paid = $20 \times 40 = 800$ pounds

c. Khaled paid = 15×40

	10	5
40	$40 \times 10 = 400$	$40 \times 5 = 200$

$15 \times 40 = 400 + 200 = 600$ pounds

d. They pay in all = 52×40

	50	2
40	$40 \times 50 = 2,000$	$40 \times 2 = 80$

$52 \times 40 = 2,000 + 80 = 2,080$ pounds

e. They need to pay = 38×30

	30	8
30	$30 \times 30 = 900$	$30 \times 8 = 240$

$38 \times 30 = 900 + 240 = 1,140$ pounds

4.

The answer is not reasonable ,
because the student multiplied
 $20 \times 50 = 100$

While $20 \times 50 = 1,000$

So , $22 \times 50 = 1,100$

Answers of multiple choice questions

- | | | |
|-------|-------|-------|
| 1. B | 2. B | 3. C |
| 4. B | 5. D | 6. C |
| 7. C | 8. B | 9. A |
| 10. B | 11. C | 12. C |
| 13. C | | |

Exercise 32

1.

a. $3 \text{ R } 2$

b. $3 \text{ R } 1$

c. $6 \text{ R } 2$

d. $6 \text{ R } 3$

e. $2 \text{ R } 2$

f. $2 \text{ R } 2$

2.

a. $6 \text{ R } 1$

b. $2 \text{ R } 4$

c. $7 \text{ R } 2$

d. $3 \text{ R } 4$

e. $5 \text{ R } 2$

f. $8 \text{ R } 1$

g. $5 \text{ R } 1$

h. $10 \text{ R } 3$

i. $5 \text{ R } 5$

3.

a. $20 \div 7 = 2 \text{ R } 6$

b. $18 \div 9 = 2 \text{ R } 0$

c. $31 \div 8 = 3 \text{ R } 7$

d. $72 \div 9 = 8 \text{ R } 0$

e. $51 \div 5 = 10 \text{ R } 1$

f. $22 \div 2 = 11 \text{ R } 0$

g. $44 \div 6 = 7 \text{ R } 2$

h. $24 \div 3 = 8 \text{ R } 0$

i. $65 \div 10 = 6 \text{ R } 5$

4.

a. 3

b. 5

c. 48

d. the divisor

e. 2

f. 3

g. 6

h. 3, 4

i. 1, 1

j. 5, 1

5.

a. $15 \div 4 = 3 \text{ R } 3$

Each friend will take 3 pies and 3 extra pies will be left.

b. $19 \div 9 = 2 \text{ R } 1$

Each friend will take 2 biscuits and 1 biscuit is left over.

c. $48 \div 5 = 9 \text{ R } 3$

10 boxes will be needed, 9 boxes will be filled with mugs and 1 more box for the 3 extra mugs.

d. 40 students will need one bus and the 20 extra students will need another bus.

So, 2 buses are needed.

6.

$[4 \times 9] + 3 = 36 + 3 = 39$

Ahmed had at the start 39 photos.

Answers of multiple choice questions

1. A

2. C

3. B

4. C

5. C

6. B

7. A

8. A

9. C

10. A

11. A

12. D

13. B

14. B

Exercise 33

1.

a. 3

b. 6

30

60

300

600

3,000

6,000

c. 7

70

700

7,000

2.

Equation	Basic [Related] Fact	Quotient
$600 \div 3$	$6 \div 3 = 2$	200
$150 \div 5$	$15 \div 5 = 3$	30
$1,200 \div 6$	$12 \div 6 = 2$	200
$200 \div 4$	$20 \div 4 = 5$	50
$700 \div 7$	$7 \div 7 = 1$	100
$6,400 \div 8$	$64 \div 8 = 8$	800
$4,500 \div 9$	$45 \div 9 = 5$	500
$270 \div 3$	$27 \div 3 = 9$	90

3.

- a. 9 b. 6 c. 20
 d. 90 e. 30 f. 110
 g. 70 h. 70 i. 900
 j. 800 k. 1,000 l. 900
 m. 5,000 n. 9,000 o. 6,000

4.

- a. 3 b. 6 c. 7
 d. 7 e. 90 f. 2,800
 g. 2 h. 8 i. 9
 j. 81,000 k. 24,000 l. 9,000
 m. 25,000 n. 48,000 o. 42,000

5.

- a. $60 \div 3 = 20$

Each period will be 20 minutes long.

- b. $120 \div 12 = 10$

There are 10 books in each class.

- c. $180 \div 9 = 20$

It will take him 20 days.

- d. $3,000 \div 5 = 600$

600 students donated.

- e. $8,100 \div 90 = 90$

They will need 90 cars

So, they can not all take the same metro.

6.

$$450 \div 50 = 9$$

There are 9 flowers in each row.

Answers of multiple choice questions

1. B 2. D 3. C 4. C
 5. C 6. D 7. B 8. C
 9. C 10. C 11. A 12. C
 13. A 14. B

Exercise 34

1.

- a. $64 \div 2$

$$\begin{array}{r} 2 \overline{) 2 \times 30 = 60} \quad 2 \overline{) 2 \times 2 = 4} \\ \underline{30} \qquad \qquad \underline{2} \end{array}$$

$$60 + 4 = 64 \text{ R } 0$$

$$30 + 2 = 32$$

$$\text{So, } 64 \div 2 = 32$$

b. $85 \div 4$

$$4 \begin{array}{|l|l|} \hline 4 \times 20 = 80 & 4 \times 1 = 4 \\ \hline 20 & 1 \\ \hline \end{array} R1$$

$$80 + 4 + 1 = 85$$

$$20 + 1 R1 = 21 R1$$

$$\text{So, } 85 \div 4 = 21 R1$$

c. $217 \div 5$

$$5 \begin{array}{|l|l|} \hline 5 \times 40 = 200 & 5 \times 3 = 15 \\ \hline 40 & 3 \\ \hline \end{array} R2$$

$$200 + 15 + 2 = 217$$

$$40 + 3 R2 = 43 R2$$

$$\text{So, } 217 \div 5 = 43 R2$$

d. $159 \div 3$

$$3 \begin{array}{|l|l|} \hline 3 \times 50 = 150 & 3 \times 3 = 9 \\ \hline 50 & 3 \\ \hline \end{array}$$

$$150 + 9 = 159 R0$$

$$50 + 3 = 53$$

$$\text{So, } 159 \div 3 = 53$$

e. $636 \div 6$

$$6 \begin{array}{|l|l|} \hline 6 \times 100 = 600 & 6 \times 6 = 36 \\ \hline 100 & 6 \\ \hline \end{array}$$

$$600 + 36 = 636 R0$$

$$100 + 6 = 106$$

$$\text{So, } 636 \div 6 = 106$$

f. $484 \div 8$

$$8 \begin{array}{|l|} \hline 8 \times 60 = 480 \\ \hline 60 \\ \hline \end{array} R4$$

$$\text{So, } 484 \div 8 = 60 R4$$

2.

a. $48 \div 4$

$$4 \begin{array}{|l|l|} \hline 4 \times 10 = 40 & 4 \times 2 = 8 \\ \hline 10 & 2 \\ \hline \end{array}$$

$$40 + 8 = 48 R0$$

$$10 + 2 = 12$$

$$\text{So, } 48 \div 4 = 12 R0$$

b. $67 \div 3$

$$3 \begin{array}{|l|l|} \hline 3 \times 20 = 60 & 3 \times 2 = 6 \\ \hline 20 & 2 \\ \hline \end{array} R1$$

$$60 + 6 + 1 = 67$$

$$20 + 2 R1 = 22 R1$$

$$\text{So, } 67 \div 3 = 22 R1$$

c. $246 \div 6$

$$6 \begin{array}{|l|l|} \hline 6 \times 40 = 240 & 6 \times 1 = 6 \\ \hline 40 & 1 \\ \hline \end{array}$$

$$240 + 6 = 246 R0$$

$$40 + 1 = 41$$

$$\text{So, } 246 \div 6 = 41$$

d. $1,596 \div 3$

$$3 \begin{array}{|l|l|l|} \hline 3 \times 500 = 1,500 & 3 \times 30 = 90 & 3 \times 2 = 6 \\ \hline 500 & 30 & 2 \\ \hline \end{array}$$

$$500 + 30 + 2 = 532$$

$$\text{So, } 1,596 \div 3 = 532$$

3.

a. $63 \div 3$

$$3 \begin{array}{|l|l|} \hline 3 \times 20 = 60 & 3 \times 1 = 3 \\ \hline 20 & 1 \\ \hline \end{array}$$

$$60 + 3 = 63 R0$$

$$20 + 1 = 21$$

$$\text{So, the share of each group is 21 muffins.}$$

b. $89 \div 6$

$$\begin{array}{r} 6 \overline{) 89} \\ \underline{6 \times 10 = 60} \\ 10 \\ \underline{6 \times 4 = 24} \\ 4 \end{array} \text{ R } 5$$

$$60 + 24 + 5 = 89$$

$$10 + 4 \text{ R } 5 = 14 \text{ R } 5$$

Each classroom will get 14 books and 5 books are left over.

c. $545 \div 5$

$$\begin{array}{r} 5 \overline{) 545} \\ \underline{5 \times 100 = 500} \\ 100 \\ \underline{5 \times 9 = 45} \\ 9 \end{array}$$

$$500 + 45 = 545 \text{ R } 0$$

$$100 + 9 = 109$$

She worked 109 days.

d. $92 \div 4$

$$\begin{array}{r} 4 \overline{) 92} \\ \underline{4 \times 20 = 80} \\ 20 \\ \underline{4 \times 3 = 12} \\ 3 \end{array}$$

$$80 + 12 = 92 \text{ R } 0$$

$$20 + 3 = 23$$

Each friend will get 23 stickers.

e. $492 \div 4$

$$\begin{array}{r} 4 \overline{) 492} \\ \underline{4 \times 100 = 400} \\ 100 \\ \underline{4 \times 20 = 80} \\ 20 \\ \underline{4 \times 3 = 12} \\ 3 \end{array}$$

$$400 + 80 + 12 = 492 \text{ R } 0$$

$$100 + 20 + 3 = 123$$

123 cars could park in each lot.

Answers of multiple choice questions

1. D 2. B 3. B

4. B 5. D 6. A

7. A 8. B 9. C

10. C

Exercise 35

1.

a. $\begin{array}{r} 4 \overline{) 72} \\ \underline{40} \\ 32 \\ \underline{32} \\ 0 \end{array} \begin{array}{l} 10 \\ 8 \end{array}$

$$72 \div 4 = 10 + 8 = 18$$

b. $\begin{array}{r} 4 \overline{) 897} \\ \underline{800} \\ 97 \\ \underline{80} \\ 17 \\ \underline{16} \\ 1 \end{array} \begin{array}{l} 200 \\ 20 \\ 4 \end{array}$

$$897 \div 4 = 200 + 20 + 4 = 224$$

and the remainder is 1

c. $\begin{array}{r} 5 \overline{) 590} \\ \underline{500} \\ 90 \\ \underline{50} \\ 40 \\ \underline{40} \\ 0 \end{array} \begin{array}{l} 100 \\ 10 \\ 8 \end{array}$

$$590 \div 5 = 100 + 10 + 8 = 118$$

$$\begin{array}{r}
 4 \overline{) 892} \quad 200 \\
 - \quad 800 \\
 \hline
 \quad 92 \quad 20 \\
 - \quad 80 \\
 \hline
 \quad \quad 12 \quad 3 \\
 - \quad \quad 12 \\
 \hline
 \quad \quad \quad 0
 \end{array}$$

$$892 \div 4 = 200 + 20 + 3 = 223$$

$$\begin{array}{r}
 6 \overline{) 925} \quad 100 \\
 - \quad 600 \\
 \hline
 \quad 325 \quad 50 \\
 - \quad 300 \\
 \hline
 \quad \quad 25 \quad 4 \\
 - \quad \quad 24 \\
 \hline
 \quad \quad \quad 1
 \end{array}$$

$$925 \div 6 = 100 + 50 + 4 = 154$$

and the remainder is 1

$$\begin{array}{r}
 3 \overline{) 1,216} \quad 400 \\
 - \quad 1,200 \\
 \hline
 \quad \quad 16 \quad 5 \\
 - \quad \quad 15 \\
 \hline
 \quad \quad \quad 1
 \end{array}$$

$$1,216 \div 3 = 400 + 5 = 405$$

and the remainder is 1

2.

a. $68 \div 4$

The dividend 68 is between 40 and 80, then $40 \div 4 = 10$, $80 \div 4 = 20$, then the quotient is between 10 and 20

b. $457 \div 3$

The dividend 457 is between 300 and 600, then $300 \div 3 = 100$, $600 \div 3 = 200$

, then the quotient is between 100 and 200

c. $87 \div 2$

The dividend 87 is between 80 and 100, then $80 \div 2 = 40$, $100 \div 2 = 50$

, then the quotient is between 40 and 50

3.

a. The dividend 632 is between 400 and 800, then $400 \div 8 = 50$, $800 \div 8 = 100$

The quotient is between 50 and 100

b. The dividend 312 is between 200 and 400, then $200 \div 4 = 50$, $400 \div 4 = 100$

The quotient is between 50 and 100

c. The dividend 762 is between 450 and 900, then $450 \div 9 = 50$, $900 \div 9 = 100$

The quotient is between 50 and 100

- d. The dividend 495 is between 300 and 600, then $300 \div 6 = 50$, $600 \div 6 = 100$

The quotient is between 50 and 100

- e. The dividend 536 is between 400 and 800, then $400 \div 8 = 50$, $800 \div 8 = 100$

The quotient is between 50 and 100

- f. The dividend 3,748 is between 2,000 and 4,000, then $2,000 \div 2 = 1,000$, $4,000 \div 2 = 2,000$

The quotient is between 1,000 and 2,000

- g. The dividend 4,681 is between 3,000 and 6,000, then $3,000 \div 3 = 1,000$, $6,000 \div 3 = 2,000$

The quotient is between 1,000 and 2,000

- h. The dividend 8,642 is between 5,000 and 10,000, then $5,000 \div 5 = 1,000$, $10,000 \div 5 = 2,000$

The quotient is between 1,000 and 2,000

4.

a.

	18
3	54
–	3
	24
–	24
	0

b.

	21 R 1
4	85
–	8
	05
–	4
	1

c.

	11 R 3
5	58
–	5
	08
–	5
	3

d.

	13 R 2
3	41
–	3
	11
–	9
	2

5.

a.

	151
3	454
–	3
	15
–	15
	04
–	3
	1

, then $454 \div 3 = 151 \text{ R } 1$

b.

	032
6	192
–	18
	12
–	12
	0

, then $192 \div 6 = 32$

c.

$$\begin{array}{r}
 389 \\
 2 \overline{) 778} \\
 \underline{- 6} \\
 17 \\
 \underline{- 16} \\
 18 \\
 \underline{- 18} \\
 0
 \end{array}$$

, then $778 \div 2 = 389$

d.

$$\begin{array}{r}
 304 \\
 3 \overline{) 912} \\
 \underline{- 9} \\
 012 \\
 \underline{- 12} \\
 0
 \end{array}$$

, then $912 \div 3 = 304$

e.

$$\begin{array}{r}
 064 \\
 8 \overline{) 512} \\
 \underline{- 48} \\
 32 \\
 \underline{- 32} \\
 0
 \end{array}$$

, then $512 \div 8 = 64$

f.

$$\begin{array}{r}
 042 \\
 8 \overline{) 336} \\
 \underline{- 32} \\
 16 \\
 \underline{- 16} \\
 0
 \end{array}$$

, then $336 \div 8 = 42$

g.

$$\begin{array}{r}
 122 \\
 3 \overline{) 368} \\
 \underline{- 3} \\
 06 \\
 \underline{- 6} \\
 08 \\
 \underline{- 6} \\
 2
 \end{array}$$

, then $368 \div 3 = 122 \text{ R } 2$

h.

$$\begin{array}{r}
 0326 \\
 4 \overline{) 1,304} \\
 \underline{- 12} \\
 10 \\
 \underline{- 8} \\
 24 \\
 \underline{- 24} \\
 0
 \end{array}$$

, then $1,304 \div 4 = 326$

i.

	1,214
4	4,858
—	4
	08
—	8
	05
—	4
	18
—	16
	2

, then $4,858 \div 4 = 1,214 \text{ R } 2$

j.

	0730
5	3,650
—	35
	15
—	15
	0

, then $3,650 \div 5 = 730$

k.

	0300
5	1,500
—	15
	0

, then $1,500 \div 5 = 300$

l.

	0477
5	2,385
—	20
	38
—	35
	35
—	35
	0

, then $2,385 \div 5 = 477$

6.

	012
The share of each one	7
$= 84 \div 7$	84
$= 12 \text{ stickers}$	— 17
	14
	— 14
	0

7.

	125
The number of students in each floor	5
$= 625 \div 5$	625
$= 125 \text{ students}$	— 5
	125
	— 10
	25
	— 25
	0

8.

	206
He covers in one hour	4
$= 824 \div 4$	824
$= 206 \text{ meters}$	— 8
	024
	— 24
	0

9.

The number of pupils
in each floor

$$= 963 \div 3$$

$$= 321 \text{ pupils}$$

$$\begin{array}{r} 321 \\ 3 \overline{) 963} \\ \underline{- 9} \\ 063 \\ \underline{- 6} \\ 03 \\ \underline{- 3} \\ 0 \end{array}$$

10.

$$\text{The total} = 172 + 8 = 180$$

Number of minibuses

$$= 180 \div 9$$

$$= 20 \text{ minibuses}$$

$$\begin{array}{r} 20 \\ 9 \overline{) 180} \\ \underline{- 18} \\ 0 \end{array}$$

11. First strategy

$$\begin{array}{r} 7 \overline{) 784} \\ \underline{- 700} \\ 84 \\ \underline{- 70} \\ 14 \\ \underline{- 14} \\ 0 \end{array} \quad \begin{array}{l} 100 \\ 10 \\ 2 \end{array}$$

Second strategy

$$\begin{array}{r} 112 \\ 7 \overline{) 784} \\ \underline{- 7} \\ 08 \\ \underline{- 7} \\ 14 \\ \underline{- 14} \\ 0 \end{array}$$

$$\therefore \text{then } 784 \div 7 = 100 + 10 + 2 = 112$$

12.

The share of each of them

$$= 2,532 \div 3$$

$$= 844 \text{ pounds}$$

$$\begin{array}{r} 0844 \\ 3 \overline{) 2,532} \\ \underline{- 24} \\ 13 \\ \underline{- 12} \\ 12 \\ \underline{- 12} \\ 0 \end{array}$$

Answers of multiple choice questions

- 1.** B **2.** B **3.** D **4.** A
5. B **6.** B **7.** B **8.** C
9. D **10.** D **11.** B **12.** A

Exercise 36**1.**

- a. $288 \div 6 = 48$ b. $300 \div 4 = 75$
c. $1,296 \div 8 = 162$ d. $5,535 \div 9 = 615$

2.

- a. $318 \div 6 = 53$ b. $1,869 \div 3 = 623$
c. $1,300 \div 4 = 325$ d. $2,525 \div 5 = 505$
e. $42 \times 7 = 294$
 $294 \div 7 = 42$
f. $93 \times 9 = 837$
 $837 \div 9 = 93$
g. $173 \times 6 = 1,038$
 $1,038 \div 6 = 173$
h. $349 \times 8 = 2,792$
 $2,792 \div 8 = 349$

3.

a. $834 \div 3$

The quotient is
between **200** and **300**

Solution : 278

$$\begin{array}{r} 278 \\ 3 \overline{) 834} \\ \underline{- 6} \\ 23 \\ \underline{- 21} \\ 24 \\ \underline{- 24} \\ 0 \end{array}$$

13. 59

b. $346 \div 5$

The quotient is
between **60** and **80**

Solution : 69 R 1

$$\begin{array}{r} 069 \\ 5 \overline{) 346} \\ - 30 \\ \hline 46 \\ - 45 \\ \hline 1 \end{array}$$

c. $562 \div 8$

The quotient is
between **50** and **100**

Solution : 70 R 2

$$\begin{array}{r} 070 \\ 8 \overline{) 562} \\ - 56 \\ \hline 02 \\ - 0 \\ \hline 2 \end{array}$$

d. $1,266 \div 6$

The quotient is
between **200** and **300**

Solution : 211

$$\begin{array}{r} 0211 \\ 6 \overline{) 1,266} \\ - 12 \\ \hline 06 \\ - 6 \\ \hline 06 \\ - 6 \\ \hline 0 \end{array}$$

e. $1,429 \div 7$

The quotient is
between **200** and **300**

Solution : 204 R 1

$$\begin{array}{r} 0204 \\ 7 \overline{) 1,429} \\ - 14 \\ \hline 02 \\ - 0 \\ \hline 29 \\ - 28 \\ \hline 1 \end{array}$$

f. $4,590 \div 3$

The quotient is
between **1,000** and
2,000

Solution : 1,530

$$\begin{array}{r} 1,530 \\ 3 \overline{) 4,590} \\ - 3 \\ \hline 15 \\ - 15 \\ \hline 09 \\ - 9 \\ \hline 0 \end{array}$$

4.

a. $159 \div 4$

$$\begin{array}{r} 039 \\ 4 \overline{) 156} \\ - 12 \\ \hline 36 \\ - 36 \\ \hline 0 \end{array}$$

, then $159 \div 4 = 39$

b. $219 \div 3$

$$\begin{array}{r} 073 \\ 3 \overline{) 219} \\ - 21 \\ \hline 09 \\ - 9 \\ \hline 0 \end{array}$$

, then $219 \div 3 = 73$

c. $27 \div 5$

$$\begin{array}{r} 05 \\ 5 \overline{) 27} \\ - 25 \\ \hline 2 \end{array}$$

, then $27 \div 5 = 5 \text{ R } 2$

d.

	097
6	583
-	54
	43
-	42
	1

, then $583 \div 6 = 97 \text{ R } 1$

e.

	0309
5	1,545
-	15
	04
-	0
	45
-	45
	0

, then $1,545 \div 5 = 309$

f.

	0901
3	2,704
-	27
	00
-	0
	04
-	3
	1

, then $2,704 \div 3 = 901 \text{ R } 1$

g.

	1,631
4	6,524
-	4
	25
-	24
	12
-	12
	04
-	4
	0

, then $6,524 \div 4 = 1,631$

h.

	1,005
3	3,017
-	3
	00
-	0
	01
-	0
	17
-	15
	2

, then $3,017 \div 3 = 1,005 \text{ R } 2$

i.

	089
6	534
-	48
	54
-	54
	0

, then $534 \div 6 = 89$

Answers of multiple choice questions

1. B 2. C 3. C
4. C 5. A 6. C
7. A 8. C 9. D

Unit 7 Assessment

1.

1. B 2. C 3. D
4. C 5. C 6. A
7. C

2.

1. 300, 70, 2 2. 4,000
3. 6, 2,166, 361 4. 90
5. 653 6. 641
7. 123 8. 313

3.

1. A 2. C 3. A
4. A 5. D 6. B
7. C

4.

1. 75

2.

$$\begin{array}{r}
 5 \overline{) 7,425} \quad 1,000 \\
 - 5,000 \\
 \hline
 2,425 \quad 400 \\
 - 2,000 \\
 \hline
 425 \quad 80 \\
 - 400 \\
 \hline
 25 \quad 5 \\
 - 25 \\
 \hline
 0
 \end{array}$$

$$\begin{aligned}
 \text{, then } 7,425 \div 5 &= 1,000 + 400 + 80 + 5 \\
 &= 1,485
 \end{aligned}$$

3. The length of 4 buses

$$= 4 \times 1,270$$

$$= 5,080 \text{ centimeters}$$

$$\begin{array}{r}
 12 \\
 1,270 \\
 \times \quad 4 \\
 \hline
 5,080
 \end{array}$$

4. He paid = $87 \times 4 = 348$ pounds

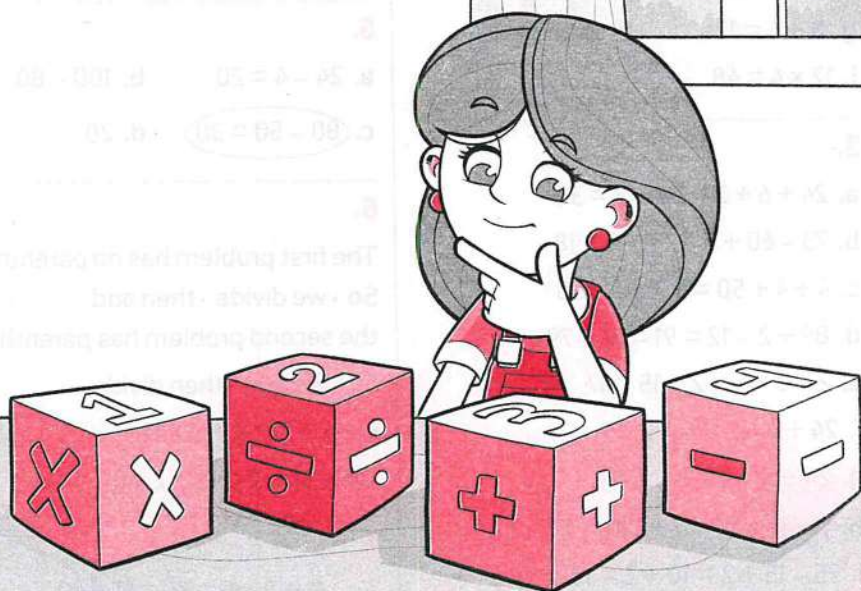
ANSWERS OF

UNIT 8

Order of Operations

► Concept 1 :

Order of Operations



Exercise 37

1.

- Add , multiply
- Correct
- Correct
- Divide , subtract
- Correct
- Subtract , divide , add

2.

- $26 + 50 = 76$
- $3 + 4 = 7$
- $4 - 2 = 2$
- $30 - 12 = 18$
- $200 - 160 = 40$
- $16 + 13 = 29$
- $8 + 4 = 12$
- $24 \div 3 = 8$
- $12 \times 4 = 48$

3.

- $24 + 6 + 2 = 30 + 2 = 32$
- $73 - 60 + 5 = 13 + 5 = 18$
- $4 + 4 + 50 = 8 + 50 = 58$
- $89 + 2 - 12 = 91 - 12 = 79$
- $2 + 3 \times 5 = 2 + 15 = 17$
- $24 \div 6 - 2 = 4 - 2 = 2$
- $24 \div 3 - 2 = 8 - 2 = 6$
- $7 + 12 \times 10 = 7 + 120 = 127$
- $25 - 15 + 2 = 10 + 2 = 12$
- $10 + 80 - 20 = 90 - 20 = 70$

4.

8	11
$15 \div 5 + 4 + 1$	$49 - 7 \times 6 + 4$
$36 \div 9 + 4$	$80 \div 10 + 6 - 3$
$12 - 72 \div 12 + 2$	
16	28
$15 - 7 + 2 + 6$	$24 - 8 \div 4 + 6$
$99 - 10 \times 9 + 7$	$8 \times 2 + 24 - 12$
32	Other
$8 \times 3 + 6 + 2$	$2 + 4 \times 6$
	$48 \div 4 + 9$
	$7 + 70 \div 10 - 2$
	$24 \times 36 \div 6 + 2$
	$40 - 7 \times 5 + 2$

5.

- $24 - 4 = 20$
- $100 - 80 = 20$
- $80 - 50 = 30$
- 20

6.

The first problem has no parentheses
So , we divide , then add
the second problem has parentheses
So , we add , then divide

$$8 + 6 \div 2 = 8 + 3 = 11$$

$$, [8 + 6] \div 2 = 14 \div 2 = 7$$

7.

$$74 - 61 + 8 \times 5 = 74 - 61 + 40$$

$$= 13 + 40 = 53$$

Sarah is correct

Saleem should follow the order
multiply, subtract, add

8.

a. $320, 5 \times 67 - 15$

b. $614, 568 + 78 - 8 \times 4$

9.

a. The share of each friend
 $= [246 - 25] \div 6 = 221 \div 6$
 $= 36$ stamps

and the remainder is 5 stamps

b. She walked $= 14 \times 14 + 56$
 $= 196 + 56$
 $= 252$ kilometers

c. Ashraf takes $= [27 + 12] \times 5$
 $= 39 \times 5 = 195$ minutes

d. The microbuses needed
 $= [172 + 8] \div 9 = 180 \div 9$
 $= 20$ microbuses

e. Number of muffins
 $= [198 - 17] \div 6 = 181 \div 6$
 $= 30$ muffins
 and 1 berry is remainder

10.

Write by yourself.

Answers of multiple choice questions

1. A 2. A 3. D 4. A
 5. C 6. D 7. B 8. C
 9. A 10. A 11. C 12. C
 13. C 14. A

Unit 8 Assessment

1.

1. B 2. C 3. C
 4. B 5. B 6. B
 7. B

2.

1. 22 2. 9 3. 23
 4. 5 5. 1 6. 2
 7. 2 8. 20

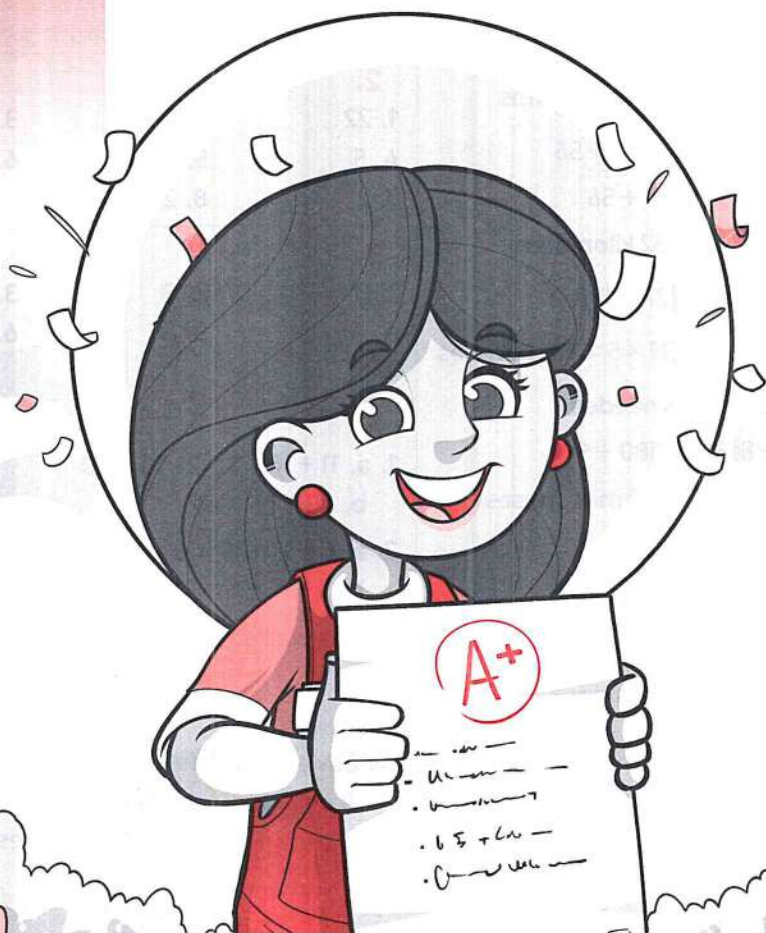
3.

1. B 2. B 3. A
 4. A 5. B 6. C
 7. B

4.

1. a. $11 + 10 - 1 = 21 - 1 = 20$
 b. $40 + 25 = 65$
 2. a. $6 + 20 \div 5 = 6 + 4 = 10$
 b. $3 + 4 = 7$
 3. She walked $= 5 \times 7 \times 2 + 60$
 $= 35 \times 2 + 60$
 $= 70 + 60 = 130$ km
 4. Edward spends $= [25 + 15] \times 5$
 $= 40 \times 5$
 $= 200$ minutes

Answers of Step by Step Revision



Unit 1

Cumulative Assessment

1

- a. D b. D
 c. C d. B
- a. 0 b. 10,000
 c. Ten Millions d. 58
 e. 3,400,371,600
 f. 17,000,000,017

- a. 5 b. 9 c. 8
 d. 6 e. 2 f. 0

Cumulative Assessment

2

- a. B b. C c. C d. A
- a. 34,905,421
 b. 700,000,000
 c. $5,000,000 + 600,000 + 10,000 + 4,000 + 3$
 d. 450,000

3.
 Composed : 618,204,375

Decomposed : $[6 \times 100,000,000]$
 $+ [1 \times 10,000,000] + [8 \times 1,000,000]$
 $+ [2 \times 100,000] + [4 \times 1,000]$
 $+ [3 \times 100] + [7 \times 10] + [5 \times 1]$

Millions			Thousands			Ones		
H	T	O	H	T	O	H	T	O
6	1	8	2	0	4	3	7	5

Cumulative Assessment

3

- a. < b. > c. < d. <

- a. A b. D c. C d. A
 e. C f. B

- The number may be 35,782

- The number may be 735,864,251

- The number may be 6,006,009,800

Cumulative Assessment

4

- a. B b. D c. B d. B

- a. 5,007,000
 b. 6,402,000,028
 c. 400,000,000
 d. 5,000,000

- a. 525,000,508 , 5,003,000,053 ,
 5,004,006,009 , 5,020,005,018
 b. 9 millions and 3 hundred
 thousands , 5 millions ,
 770,322 , 500 thousands.

Cumulative Assessment

5

- a. 570,000

580,000

575,000

574,698

570,000

b. 13,000



2. a. 4,900 b. 8,000,000
c. 100,000,000 d. 54,320,000

3. a. A b. B c. A
d. B e. C f. C

4. The numbers may be :
• 784,531 • 784,521
• 784,496 • 784,476
• 784,450

5. $[7 \times 1,000,000,000]$
 $+ [4 \times 100,000,000]$
 $+ [5 \times 10,000,000]$
 $+ [3 \times 1,000,000] + [3 \times 100,000]$
 $+ [6 \times 10,000] + [1 \times 1,000]$
 $+ [2 \times 100] + [1 \times 10] + [4 \times 1]$

Unit 2

Cumulative Assessment 6

1. a. A b. A c. C d. B
2. a. 35 b. 134 c. 9,463
d. 0 e. Hundred Thousands

3.

a. $17 + 8 + 3 = 17 + 3 + 8$
[commutative property]
 $= [17 + 3] + 8$
[associative property]
 $= 20 + 8 = 28$

b. $35 + 14 + 15 + 36$
 $= 35 + 15 + 14 + 36$
[commutative property]
 $= [35 + 15] + [14 + 36]$
[associative property]
 $= 50 + 50 = 100$

4. a. 773,330 b. 770,000

Cumulative Assessment 7

1. a. A b. B c. B d. C

2.

a.
$$\begin{array}{r} 35,462 \\ + 23,221 \\ \hline 58,683 \end{array} \longrightarrow \begin{array}{r} 35,500 \\ + 23,200 \\ \hline 58,700 \end{array}$$

b.
$$\begin{array}{r} 2,942 \\ + 350 \\ \hline 3,292 \end{array} \longrightarrow \begin{array}{r} 2,900 \\ + 400 \\ \hline 3,300 \end{array}$$

c.
$$\begin{array}{r} 94,641 \\ + 2,961 \\ \hline 97,602 \end{array} \longrightarrow \begin{array}{r} 94,600 \\ + 3,000 \\ \hline 97,600 \end{array}$$

3.

$$142 + 55 + 18 + 45 = 142 + 18 + 55 + 45$$

[commutative property]

$$= [142 + 18] + [55 + 45]$$

[associative property]

$$= 160 + 100 = 260$$

4.

Estimate:

$$3,573 + 4,230 = 3,600 + 4,200 = 7,800$$

$$\text{Exact: } 3,573 + 4,230 = 7,803$$

5. The order is:

- Three milliard, five hundred million, fourteen.
- 3 milliards, 50 millions, 40
- $3,000,000,000 + 20,000,000 + 400$
- 3,000,786,562

Cumulative Assessment

8

1.

a.

7,356
– 2,547
4,809

 $\longrightarrow$

7,360
– 2,550
4,810

b.

3,785
– 2,816
969

 $\longrightarrow$

3,790
– 2,820
970

c.

35,204
– 4,071
31,133

 $\longrightarrow$

35,200
– 4,070
31,130

2.

- a. 355 b. 4,065 c. 1,564
d. 73,911 e. 6,389 f. 27,532

3.

- a. B b. C c. A
d. C e. D

4.

$$\begin{aligned} \text{The difference} &= 3,267 - 2,879 \\ &= 388 \text{ toys} \end{aligned}$$

Cumulative Assessment

9

1.

- a. 873 b. 3,467,219
c. 67,125 d. Ten Thousands

2.

- a. C b. B c. B d. C

3.

a. Bar model:

s	
74,252	23,402

$$\begin{aligned} \text{Solution: } s &= 74,252 + 23,402 \\ &= 97,654 \end{aligned}$$

b. Bar model:

21,253	
b	4,261

$$\text{Solution: } b = 21,253 - 4,261 = 16,992$$

c. Bar model:

47,261	
m	31,422

$$\begin{aligned} \text{Solution: } m &= 47,261 - 31,422 \\ &= 15,839 \end{aligned}$$

d. Bar model:

52,428	
45,261	k

Solution : $k = 52,428 - 45,261 = 7,167$

4.

Let the number of female be m

Bar model:

74,319	
32,425	m

Solution : $m = 74,319 - 32,425 = 41,894$

5.

a. $75 + 87 + 25 = 75 + 25 + 87$
 [commutative property]
 $= [75 + 25] + 87$
 [associative property]
 $= 100 + 87 = 187$

b. $712 + 59 + 28 + 111 = 712 + 28 + 59 + 111$
 [commutative property]
 $= [712 + 28] + [59 + 111]$
 [associative property]
 $= 740 + 170 = 910$

Cumulative Assessment

10

1.

- a. 46,856
 b. 4,000,000,000
 c. $2,000,000,000 + 700,000,000$
 $+ 80,000,000 + 5,000,000 + 600,000$
 $+ 20,000 + 9,000 + 100 + 40 + 2$
 d. $[15 + 5] + 7$ [associative property]
 $= 20 + 7 = 27$
 e. 44,709
 f. 65

2.

a. C

b. C

c. B

d. D

3.

a.

$\begin{array}{r} 5,646 \\ - 2,389 \\ \hline 3,257 \end{array}$	→	$\begin{array}{r} 5,600 \\ - 2,400 \\ \hline 3,200 \end{array}$
---	---	---

b.

$\begin{array}{r} 72,861 \\ - 5,466 \\ \hline 67,395 \end{array}$	→	$\begin{array}{r} 72,900 \\ - 5,500 \\ \hline 67,400 \end{array}$
---	---	---

c.

$\begin{array}{r} 2,462 \\ + 1,391 \\ + 946 \\ \hline 4,799 \end{array}$	→	$\begin{array}{r} 2,500 \\ + 1,400 \\ + 900 \\ \hline 4,800 \end{array}$
--	---	--

4.

- Population of South Sinai and North Sinai = $111,835 + 450,528 = 562,363$
- Population of Port Said more than them by = $782,180 - 562,363$
 $= 219,817$

5.

- The library sold = $5,325 + 9,712$
 $= 15,037$ books
- The left = $20,000 - 15,037$
 $= 4,963$ books

Unit 3

Cumulative Assessment

11

- | | | |
|-----------|-------------------------------|--------------------------------------|
| 1. | a. 7 , 83
c. 25,423 | b. 7 , 486 |
| 2. | a. 7,000
c. 7,050
e. 13 | b. 7,800,000
d. 8 , 762
f. 110 |
| 3. | a. C
c. A
e. C | b. B
d. C |
| 4. | a. 4,429
c. 2,574 | b. 67,453 |

Cumulative Assessment

12

1. a. 7 , 6 b. 8 , 875
c. 2,034,789 d. 38,000
e. 7,004 f. 2,000,000

2. a. B b. C
c. A d. D
e. C

3. a. 8 , 782 b. 29 , 419
c. 52,034

4. 21,000 g , 23,000 g , 25 kg
2 ton

5. The car covers = $2 \times 8 = 16$ km
= 16,000 m

Cumulative Assessment

13

1. a. 3 , 450 b. 74 , 82
c. 7,015 d. 25
e. 3 , 729

2. a. B b. C
c. A d. B
e. C

3. Petrol was used
= 25 L, 400 mL – 10 L, 230 mL
= 15 L, 170 mL

4. $18 + 35 + 82 + 15$
 $= 18 + 82 + 35 + 15$ [Commutative]
 $= [18 + 82] + [35 + 15]$ [Associative]
 $= 100 + 50 = 150$

5. There are many numbers , for example :

341.234	335.216
---------	---------

342,167 336,247

Cumulative Assessment

14

1. a. 5:15 15 past 5
b. 1:50 10 to 2
c. 9:25 25 past 9
d. 7:10 10 past 7
-
2. a. 544 b. 14 , 650 c. 200
d. 25 e. 7 , 23 f. 35
g. 9 , 8

3. a. B b. D c. C
d. D e. A

Cumulative Assessment 15

1. a. A b. C c. A
d. B e. A
2. The length of the left cloth
= 5 m, 50 cm – 2 m, 25 cm
= [5 – 2] m, [50 – 25] cm
= 3 m, 25 cm
3. The total =
43 kg, 450 g + 34 kg, 900 g
= [43 + 34] kg + [450 + 900] g
= 77 kg, 1,350 g = 78 kg, 350 g
4. a. 160 b. 1,820 c. 1,083
d. 780 e. 120
5. a. 10 : 10 , 10 past 10
b. 11 : 15 , 15 past 11

Cumulative Assessment 16

1. a. D b. C c. D
d. B e. A
2. a. 78,460 b. 9 , 250
c. 12 d. 2,020
3. 25,000 mL = 25 liters
The tank needed = 70 – 25
= 45 liters
4. He will study in 6 days = 30×6
= 180 minutes = 3 hours

5. The ant will walk = 5×20
= 100 km = 100,000 m

Unit 4

Cumulative Assessment 17

1. a. 6 : 05 b. 40 c. 280
d. 5,034
e. 39 , additive identity
f. 350
2. a. C b. C c. A
d. C e. A
3. a. First formula :
 $P = 7 + 4 + 7 + 4 = 22$ m
Second formula :
 $P = [2 \times 7] + [2 \times 4] = 14 + 8$
= 22 m
- b. First formula :
 $P = 40 + 40 + 40 + 40$
= 160 mm
Second formula :
 $P = 40 \times 4 = 160$ mm
4. $P = 2 \times [L + W] = 2 \times [42 + 28]$
= $2 \times 70 = 140$ mm

Cumulative Assessment 18

1. a. C b. D c. B
d. A e. C
2. a. 75,151 b. 21,380 c. 3,003
d. 570 e. 73 f. 700

3. a. $A = 24 \text{ cm}^2$, $P = 20 \text{ cm}$
 b. $A = 2,500 \text{ m}^2$, $P = 200 \text{ m}$
 c. $A = 84 \text{ km}^2$, $P = 38 \text{ km}$

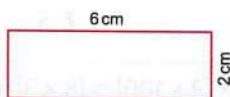
4. The answers may vary

a.



$$P = 2 \times [3 + 4] = 2 \times 7 = 14 \text{ cm}$$

b.



$$P = 2 \times [6 + 2] = 2 \times 8 = 16 \text{ cm}$$

Cumulative Assessment

19

1. a. 36 cm^2 b. 5 cm c. 4 m
 d. 10 : 07 e. 38,000

2. a. A b. B c. B
 d. A e. C

3. a. 1 : 50 10 to 2
 b. 3 : 30 half past 3
 c. 5 : 40 20 to 6
 d. 9 : 10 10 past 9

4. $P = 20 \text{ cm}$, $L = 6 \text{ cm}$
 $W = [P \div 2] - L = [20 \div 2] - 6$
 $= 10 - 6 = 4 \text{ cm}$
 $A = L \times W = 6 \times 4 = 24 \text{ cm}^2$

5. 2,000 grams = 2 kilograms
 The number of days = $10 \div 2$
 $= 5 \text{ days}$

Cumulative Assessment

20

1. a. 44 b. 135 c. 7
 d. 5,000,000 e. 7, 5
 f. 0

2. a. C b. C
 c. B d. D

3. a. 457 b. 207

4. The side length of the playground
 $= 20 \div 4 = 5 \text{ m}$
 The area of the playground
 $= 5 \times 5 = 25 \text{ m}^2$

Unit 5

Cumulative Assessment

21

1. a. B b. D
 c. C d. A
 e. D

2. a. 3 b. 54 , 6
 c. 96 d. $4 \times 10 = 40$
 e. 0

3. a. $A = 36 \text{ cm}^2$, $P = 24 \text{ cm}$
 b. $A = 36 \text{ cm}^2$, $P = 30 \text{ cm}$

4. a. 64 is 8 times the number 8
b. $36 = 9 \times 4$

Cumulative Assessment

22

1. a. Equation: $n = 6 \times 5$
Answer: $n = 30$
b. Equation: $40 = 5 \times a$
Answer: $a = 40 \div 5 = 8$
c. Equation: $70 = m \times 10$
Answer: $m = 70 \div 10 = 7$

2. a. $n = 16$
b. $k = 49 \div 7 = 7$
c. $b = 72 \div 9 = 8$

3. a. B b. A c. C d. D

4. a. 4 b. 36
c. 5 d. Ten Thousands
e. 3,000

Cumulative Assessment

23

1. a. 5 b. 6,000
c. 3,155 d. 0
e. 65 f. 18

2. a. D b. A c. D d. A

3. a. $>$ b. $<$ c. $=$ d. $=$

4. $4 \times 9 = 9 \times 4 = 36$ (Ways may vary)

5. Hany paid $= 4 \times 3,000$
 $= 12,000$ pounds

Cumulative Assessment

24

1. a. $4 \times 9 = 36$ b. $6 \times 10 = 60$
c. $8 \times 7 = 56$ d. $90 \times 3 = 270$
e. $40 \times 5 = 200$ f. $8 \times 60 = 480$

2. a. 27 b. 7:45
c. 180 d. 8
e. 8 f. 5

3. a. $8 \times [3 \times 100] = [8 \times 3] \times 100$
 $= 24 \times 100 = 2,400$
b. $5 \times [7 \times 1,000] = [5 \times 7] \times 1,000$
 $= 35 \times 1,000$
 $= 35,000$

4. Ayman has $= 5 \times 8 \times 6$
 $= [5 \times 8] \times 6 = 40 \times 6$
 $= 240$ pencils

5. a. A b. B c. B
d. C e. D

Unit 6

Cumulative Assessment

25

1. a. B b. A c. D
d. C e. A

2. a. 1, 2, 3, 6 b. 2
c. 76,000 d. 80,000,000
e. 8,008 f. 78, 9
g. 4

3.
a. The factors are : 1, 2, 4, 8, 16, 32
b. The factors are : 1, 23
c. The numbers are : 23, 29, 31, 37
d. The numbers are : 51, 52, 54, 55, 56, 57, 58, 60, 62, 63, 64

Cumulative Assessment 26

1. a. 1, 2, 4 b. 1, 2, 3, 6
c. 1
2. a. 2 b. 2,400
c. 40, 7, 280 d. 5
e. 3,300
3. a. A b. C c. D
d. A e. C

4.
Factors of 48 : 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

Factors of 40 : 1, 2, 4, 5, 8, 10, 20, 40

Common factors : 1, 2, 4, 8

GCF : 8

The greatest number of packs is 8
pack of 6 pens and 5 pencils in each
pack

Cumulative Assessment 27

1. a. 0 b. 2
c. 50,341,143 d. 5,302
e. 2
2. a. D b. A c. C d. B
3. a. 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
b. 1, 2, 3, 4, 6, 9, 12, 18, 36
c. 10, 20 [Answers may vary]
4. 5, 10, 15, 20, 25, 30
He will go six times.

Cumulative Assessment 28

1. a. 5, 15
b. 2, 6, 12 [Answers may vary]
c. 20 d. 280 e. 27
2. a. B b. C c. A
d. B e. D
3. a. 30 b. 6 or 9
4.
a. • 5 is a factor of 10
• 10 is a multiple of 2
[Answers may vary]
b. • 12 is a multiple of 4
• 30 is a multiple of 6
[Answers may vary]

Unit 7

Cumulative Assessment

29

1. a. 90, 5 b. 20, 160
c. 8 d. 1,000, 700, 30
e. 3,004,005,006

2. a. B b. A c. A
d. D e. C

3.

a. $73 = 70 + 3$

	70	3
5	$5 \times 70 = 350$	$5 \times 3 = 15$

$5 \times 73 = 350 + 15 = 365$

b. $61 \times 9 = (60 + 1) \times 9$
 $= (60 \times 9) + (1 \times 9)$
 $= 540 + 9 = 549$

4.

Mohamed has $= 7 \times 45$
 $= 7 \times [40 + 5]$
 $= [7 \times 40] + [7 \times 5]$
 $= 280 + 35$
 $= 315$ candies

Cumulative Assessment

30

1. a. D b. B c. C
d. D e. A

2. a. 50,000 b. 36 c. 14
d. 8,960 e. 7,000 f. 550

3.

a.	78	b.	642
$\times$	9	$\times$	4
	72		8
$+$	630	$+$	160
	702	$+$	2,400
			2,568

4. a. 24 b. 22

5. The mass of 7 boxes $= 131 \times 7$
 $= 917$ kg

Cumulative Assessment

31

1. a. B b. B c. D
d. A e. B

2. a. 1,320 b. 3,958
c. commutative d. 96
e. 34 f. 250

3. a. 4 m b. 7 cm

4.

- a. Dina paid $= 25 \times 30 = 750$ pounds
b. 37,661, 37,908, 38,042
[Answers may vary]

Cumulative Assessment **32**

1. a. 5 b. Millions c. 6
d. 1, 23 e. 6 f. 7
-
2. a. C b. C c. C
d. A e. C f. C
-
3. a. 5 R 4 b. 7 R 6 c. 9 R 4
d. 9 R 1 e. 6 R 3 f. 9 R 0
-

4.

$$64 \div 3 = 21 \text{ R } 1$$

He can give each son 21 pounds
and the remainder is 1 pound.

Cumulative Assessment **33**

1. a. 200 b. 1,000 c. 6,000
d. 12, 2 e. 112 f. 11
g. 500 h. 7,280
-
2. a. A b. D c. B
d. B e. A f. C
-

3.

$$\begin{aligned} \text{The number of tourists} &= 320 \div 8 \\ &= 40 \text{ tourists} \end{aligned}$$

4. The length = $15 \div 3 = 5$ meters
-

5.

- a. Area = 40 m^2
Perimeter = 28 m
- b. Area = 49 cm^2
Perimeter = 28 cm

Cumulative Assessment **34**

1. a. A b. B c. D
d. B e. B
-
2. a. Two milliard, three hundred
million, thirty thousand,
three
b. 0 c. 7
d. $7 \times 5 = 35$ e. 3
-

3.

a. $84 \div 3$

3	$3 \times 20 = 60$	$3 \times 8 = 24$
	20	8

$$60 + 24 = 84 \text{ R } 0$$

$$\text{So, } 84 \div 3 = 20 + 8 = 28$$

b. $216 \div 6$

6	$6 \times 30 = 180$	$6 \times 6 = 36$
	30	6

$$180 + 36 = 216 \text{ R } 0$$

$$\text{So, } 216 \div 6 = 30 + 6 = 36$$

4. a. 26 b. 190
c. 1,245 d. 131

Cumulative Assessment **35**

1. a. 162 b. 167, 6 c. 98, 80
d. 0 e. 21
-
2. a. C b. B c. A
d. A e. D

3.

a. $89 \div 3$

$$\begin{array}{r} 3 \overline{) 89} \quad 20 \\ - 60 \\ \hline 29 \quad 9 \\ - 27 \\ \hline 2 \end{array}$$

So, $89 \div 3 = 20 + 9 \text{ R } 2 = 29 \text{ R } 2$

b. $628 \div 4$

$$\begin{array}{r} 4 \overline{) 628} \quad 100 \\ - 400 \\ \hline 228 \quad 50 \\ - 200 \\ \hline 28 \quad 7 \\ - 28 \\ \hline 0 \end{array}$$

So, $628 \div 4 = 100 + 50 + 7 = 157$

c. $2,374 \div 6$

$$\begin{array}{r} 6 \overline{) 2,374} \quad 300 \\ - 1,800 \\ \hline 574 \quad 90 \\ - 540 \\ \hline 34 \quad 5 \\ - 30 \\ \hline 4 \end{array}$$

So, $2,374 \div 6 = 300 + 90 + 5 \text{ R } 4$
 $= 395 \text{ R } 4$

4.

a. $835 \div 5$

$$\begin{array}{r} 167 \\ 5 \overline{) 835} \\ - 5 \quad \\ \hline 33 \quad \\ - 30 \quad \\ \hline 35 \quad \\ - 35 \quad \\ \hline 0 \end{array}$$

b. $4,258 \div 7$

$$\begin{array}{r} 0 \ 608 \ \text{R } 2 \\ 7 \overline{) 4,258} \\ - 42 \quad \\ \hline 05 \quad \\ - 0 \quad \\ \hline 58 \quad \\ - 56 \quad \\ \hline 2 \end{array}$$

c. $6,660 \div 9$

$$\begin{array}{r} 0 \ 740 \\ 9 \overline{) 6,660} \\ - 63 \quad \\ \hline 36 \quad \\ - 36 \quad \\ \hline 0 \end{array}$$

Cumulative Assessment

36

1. a. B b. C c. A
d. C e. C
2. a. $1,686 \div 6 = 281$ b. 307, 1
c. 92 d. 300, 60, 2
e. 641 f. 300,000,000
3. The share of each one = $358 \div 2$
= 179 L.E.

4.

- a. $2,526 \div 6 = 421$
b. $764 \div 2 = 382$
c. $5,216 \div 8 = 652$
d. $2,312 \div 4 = 578$

Unit 8

Cumulative Assessment

37

1. a. 13 b. 29 c. 145
d. 900 R 2 e. 219,353 f. 10
2. a. 6 b. 96
c. 13 d. 1,960
e. 5,008,040 f. 4,400
3. a. C b. A c. B
d. D e. A f. B
4. The number of minibuses
= $(330 - 154) \div 8 = 176 \div 8$
= 22 minibuses

Tests of October

Test 1

1. 1. D 2. D 3. C
4. D 5. D

2. 1. 60,000,000 2. 621
3. 7,007,314 4. 35
5. 740,000

3. a. The difference
= $519,800 - 112,200$
= 407,600 people.
b. $12 + 30 + 28 + 20$
= $12 + 28 + 30 + 20$
[Commutative]
= $(12 + 28) + (30 + 20)$
[Associative] = $40 + 50 = 90$

Test 2

1. 1. 45,068 2. 3,137,619,088
3. 9,000 4. Ten Millions.
5. 6,000

2. 1. C 2. D 3. A
4. C 5. B

3. a. The total =

	kg	g
	3	400
+	5	217
	8 kg and 617 g	

b.

Hours	+ 60	Minutes
9 10	:	65 05
- 7	:	50
2	:	15

So, the time of the game is
2 hours and 15 minutes.

Test 3

1. 1. D 2. D 3. C
4. C 5. C

2. 1. 84 2. 6,150
3. Millions. 4. 50,345,730
5. 8

3. a. The order is : 4,273,653 ,
4,237,690 , 4,237,651 , 495,627
b. Sameh paid
= $500,000 - 251,650$
= 248,350 pounds.

Tests of November

Test 1

1. 1. C 2. D 3. B
4. C 5. B

2. 1. $5 \times 8 = 40$ 2. 3 3. 5
4. 2 5. 5

3. a. 12 [Answers may vary]

b. Factors of 40 : 1, 2, 4, 5, 8
 , 10, 20, 40

Factors of 50 : 1, 2, 5, 10
 , 25, 50

Common factors : 1, 2, 5, 10

G.C.F : 10

Test 2

1. 1. B 2. C 3. B
 4. A 5. C

2. 1. 5 2. 16
 3. 1, 2, 5, 10
 4. 1,500 5. $2 \times L + 2 \times W$

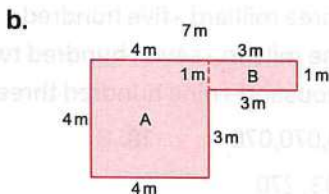
3. a. The length of the border
 $= 30 \times 4 = 120 \text{ cm}$
 b. Factors of 18 : 1, 2, 3, 6, 9, 18
 Factors of 6 : 1, 2, 3, 6
 Common factors : 1, 2, 3, 6
 G.C.F : 6

Test 3

1. 1. B 2. D 3. B
 4. D 5. C

2. 1. 8 2. 1,000
 3. 15 4. 6
 5. 40

3. a. $2 \times 3 \times 5 = 2 \times 5 \times 3$
 $= [2 \times 5] \times 3$
 $= 10 \times 3$
 $= 30$



Area of the square A

$$= 4 \times 4 = 16 \text{ m}^2$$

Area of the rectangle B

$$= 3 \times 1 = 3 \text{ m}^2$$

Area of the complex shape

$$= 16 + 3 = 19 \text{ m}^2$$

Perimeter of the complex
 shape $= 7 + 1 + 3 + 3 + 4 + 4$
 $= 22 \text{ m}$

Answers of

General Revision

Unit 1

1.

- | | |
|----------------|---------------|
| 1. 164,000,000 | 2. 3,214,936 |
| 3. 409 | 4. 60,000,000 |
| 5. 60,000,000 | 6. 8,000,000 |
| 7. Millions | 8. Millions |
| 9. Millions | 10. 400 |
| 11. 30,000 | 12. 7,000,000 |
| 13. 33,000 | 14. 1,035,689 |
| 15. 3,008,433 | |

16. Three milliard , five hundred one million , seven hundred two thousand , nine hundred three.

- | | |
|----------------|-------|
| 17. 70,070,070 | 18. 8 |
| 19. 503,270 | |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. B | 2. B | 3. C | 4. C |
| 5. A | 6. C | 7. A | 8. A |
| 9. B | 10. C | 11. C | 12. B |
| 13. D | 14. B | 15. D | 16. A |
| 17. A | 18. A | 19. C | 20. B |
| 21. C | 22. C | 23. A | |

3.

1. 9 millions , 5 millions and 7 hundred thousands , 900 thousands , 500,223
2. 179,462,490 [Answers may vary]

3. 7,534,786 , 8,092,561 , 8,650,336 , 9,208,111

4. 988,423 , 1,282,756 , 3,012,427 , 3,105,338

5. $2,000,000,000 + 400,000,000 + 40,000,000 + 5,000,000 + 200,000 + 30,000 + 2,000 + 100 + 90 + 7$

6. a. 556,500 b. 600,000

7. $[3 \times 1,000,000] + [1 \times 100,000] + [6 \times 10,000] + [6 \times 1,000] + [2 \times 100] + [5 \times 10] + 2$

8. a. 5 b. 1 c. 3

Unit 2

1.

- | | |
|------------|-----------|
| 1. 1,000 | 2. 0 |
| 3. 7,000 | 4. 1,000 |
| 5. 520 | 6. 5,000 |
| 7. 6,885 | 8. 88,223 |
| 9. 3,310 | 10. 102 |
| 11. 10,901 | 12. 2,000 |
| 13. 854 | 14. 5,168 |
| 15. 5,242 | 16. 6,848 |
| 17. 35 | 18. 48 |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. A | 2. D | 3. B | 4. C |
| 5. C | 6. B | 7. A | 8. A |
| 9. D | 10. C | 11. A | 12. D |
| 13. C | 14. B | 15. C | 16. C |
| 17. C | 18. C | | |

3.

- Mohamed paid = $668,500 - 342,650$
= 325,850 pounds
- The number of ants = $142 + 165$
= 307 ants
- The remaining distance = $675 - 239$
= 436 km
- The total = $1,653,465 + 3,312,447$
= 4,965,912 people
- He paid = $7,250 + 4,000 = 11,250$ L.E.
- The difference = $517,901 - 112,211$
= 405,690 people
- $G = 930 - 710 = 220$

8. Bar model

m	
35,462	2,741

Solution $\rightarrow m = 35,462 + 2,741$
= 38,203

9. $K = 349 - 226 = 123$

Unit 3**1.**

- | | |
|------------|--------------|
| 1. 35,086 | 2. 30 |
| 3. 6,000 | 4. 9,000,000 |
| 5. 4,300 | 6. 5,005 |
| 7. 48 | 8. 2,000 |
| 9. 9 | 10. 65 |
| 11. 35,086 | 12. 32,077 |
| 13. 9 | 14. 10,000 |
| 15. 260 | 16. 845 |
| 17. 9,250 | 18. 9 |

19. 5,275

20. 8

21. 3,258

22. 10 : 07

23. 35

24. 635

25. 900

26. 35

2.

- | | | | |
|-------|-------|-------|-------|
| 1. B | 2. C | 3. C | 4. C |
| 5. C | 6. A | 7. A | 8. B |
| 9. D | 10. C | 11. D | 12. C |
| 13. D | 14. D | 15. D | 16. B |
| 17. C | 18. D | 19. D | 20. C |
| 21. C | 22. A | 23. D | 24. D |
| 25. B | | | |

3.

- 8 mm , 8 m , 8,000 cm , 8 km
- Number of hours = 3×24
= 72 hours
- Number of minutes = 8×60
= 480 minutes
- Number of minutes = 5×30
= 150 minutes
- The distance = $2 \times 10 = 20$ km
= 20,000 m
- It will end at 5 : 45 P.M.
- It needed = $50 - 20 = 30$ liters

Unit 4**1.**

- | | |
|-------|-------|
| 1. 21 | 2. 20 |
| 3. 20 | 4. 24 |

- | | |
|------------------------|----------------------|
| 5. 16 | 6. 7 |
| 7. 21 | 8. 24 |
| 9. 12 | 10. 20 |
| 11. 32 | 12. 35 |
| 13. $(L + W) \times 2$ | 14. 12 |
| 15. itself | 16. $S \times 4$ |
| 17. 36 | 18. 4 |
| 19. length | 20. 9 cm^2 |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. C | 2. D | 3. A | 4. A |
| 5. C | 6. C | 7. D | 8. D |
| 9. B | 10. B | 11. A | 12. D |
| 13. C | 14. B | 15. D | 16. C |
| 17. B | 18. C | 19. B | |

3.

- The perimeter $= (7 + 4) \times 2 = 22$ meters
- The area $= 8 \times 8 = 64 \text{ cm}^2$
- The area $= 4 \times 4 = 16$ square meters
- The perimeter $= 2 \times (5 + 3) = 2 \times 8 = 16 \text{ cm}$
- The perimeter $= 2 \times (16 + 14) = 2 \times 30 = 60 \text{ cm}$
- Area of the garden $= 6 \times 6 = 36 \text{ m}^2$
- $A = 84 \text{ cm}^2$
 $P = 46 \text{ cm}$
- a. Perimeter $= 2 \times 6 + 2 \times 4 = 12 + 8 = 20 \text{ cm}$
b. Perimeter $= 5 \times 4 = 20 \text{ cm}$
- a. Perimeter $= 7 \times 4 = 28 \text{ cm}$
b. Area $= 7 \times 7 = 49 \text{ cm}^2$

Unit 5

1.

- | | |
|----------|--------------------|
| 1. 3,500 | 2. 3 |
| 3. 6 | 4. 1,800 |
| 5. zero | 6. 70 pounds |
| 7. 1,500 | 8. 7 |
| 9. 600 | 10. 3 |
| 11. 25 | 12. 45×12 |
| 13. 4 | 14. 2,100 |
| 15. 50 | 16. 9 |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. D | 2. D | 3. A | 4. A |
| 5. C | 6. A | 7. B | 8. B |
| 9. B | 10. B | 11. A | 12. D |
| 13. A | 14. C | 15. A | 16. D |
| 17. B | 18. B | 19. C | 20. A |
| 21. A | 22. A | 23. A | 24. B |
| 25. D | 26. C | 27. C | 28. D |

3.

- The total $= 5,000 \times 9 = 45,000$ meters
 $= 45$ kilometers
- Mariam paid $= 4 \times 1,000 = 4,000$ pounds
- The price of all pens $= 10 \times 200 = 2,000$ piasters
- Ali travelled $= 3,000 \times 8 = 24,000 \text{ m} = 24 \text{ km}$
- His brother ate $= 4 \times 3 = 12$ figs
- Hany gains $= 30 \times 8 = 240 \text{ L.E.}$

Unit 6

1.

- | | |
|------|---------------|
| 1. 2 | 2. 2 |
| 3. 2 | 4. 7 |
| 5. 1 | 6. 27 |
| 7. 2 | 8. 0 |
| 9. 3 | 10. 5, 10, 15 |

11. 6 or 12 [answer may vary]

- | | |
|----------|--------------|
| 12. 6 | 13. 2 |
| 14. 8 | 15. 24 |
| 16. 10 | 17. 36, 4, 9 |
| 18. 3, 5 | 19. 21, 21 |

20. 9

21. 1, 2, 3, 4, 6 and 12

$$\begin{array}{r} 12 \\ 1 \overline{) 12} \\ \underline{12} \\ 0 \end{array}$$

2.

- | | | | |
|-------|-------|-------|-------|
| 1. A | 2. C | 3. B | 4. D |
| 5. C | 6. C | 7. C | 8. B |
| 9. C | 10. B | 11. B | 12. C |
| 13. C | 14. C | 15. C | 16. D |
| 17. A | 18. A | 19. D | 20. D |
| 21. B | 22. A | 23. D | 24. A |
| 25. C | 26. D | | |

3.

1. Factors of 25 are 1, 5, 25

Factors of 35 are 1, 5, 7, 35

Common factors are 1, 5

G.C.F = 5

2. Factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24

24 is a composite number.

3. Factors of 12 are 1, 2, 3, 4, 6, 12

Factors of 18 are 1, 2, 3, 6, 9, 18

Common factors are 1, 2, 3, 6

G.C.F = 6

4. Factors of 14 are 1, 2, 7, 14

Factors of 21 are 1, 3, 7, 21

Common factors are 1, 7

G.C.F = 7

5. Factors of 16 are 1, 2, 4, 8, 16

Factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24

Common factors are 1, 2, 4, 8

G.C.F = 8

6. Factors of 20 are 1, 2, 4, 5, 10, 20

Factors of 15 are 1, 3, 5, 15

Common factors are 1, 5

G.C.F = 5

7. Factors of 30 are 1, 2, 3, 5, 6, 10, 15, 30

Factors of 45 are 1, 3, 5, 9, 15, 45

Common factors are 1, 3, 5, 15

G.C.F = 15

8. 28

9. Multiples of 9 are 9, 18, 27, 36

[Answer may vary]

Unit 7

1.

- | | |
|-----------|----------|
| 1. 12,615 | 2. 64 |
| 3. 121 | 4. 107 |
| 5. 389 | 6. 1, 1 |
| 7. 7 | 8. 60 |
| 9. 1,000 | 10. 3 |
| 11. 304 | 12. 110 |
| 13. 641 | 14. 5, 1 |
| 15. 102 | 16. 48 |
| 17. 10 | 18. 6 |
| 19. 101 | 20. 653 |
| 21. 517 | 22. 632 |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. C | 2. C | 3. C | 4. C |
| 5. B | 6. C | 7. A | 8. B |
| 9. C | 10. C | 11. C | 12. C |
| 13. B | 14. B | 15. C | 16. B |
| 17. C | 18. A | 19. A | 20. C |
| 21. B | 22. B | 23. B | 24. B |
| 25. A | | | |

3.

1. The mass = $124 \times 5 = 620$ kg
2. Number of kilometers
 $= 58 \times 9$ 50 8
 $= 450 + 72$
 $= 522$ km
- | | | |
|---|-----------------|---------------|
| 9 | 50 × 9
= 450 | 9 × 8
= 72 |
|---|-----------------|---------------|
3. Number of days = $545 \div 5$
 $= 109$ days

4. Number of teams = $72 \div 9$
 $= 8$ teams

5. The number of sweet pieces
 $= 15 \times 7 = 105$ sweet pieces

6. $246 \div 6 = 41$

7. The share of each one
 $= 84 \div 7 = 12$ stickers

Unit 8

1.

- | | | |
|--------|--------|--------|
| 1. 13 | 2. 6 | 3. 21 |
| 4. 9 | 5. 13 | 6. 8 |
| 7. 2 | 8. 4 | 9. 20 |
| 10. 18 | 11. 20 | 12. 3 |
| 13. 10 | 14. 8 | 15. 11 |

2.

- | | | | |
|-------|-------|-------|-------|
| 1. C | 2. A | 3. C | 4. B |
| 5. D | 6. C | 7. A | 8. C |
| 9. A | 10. C | 11. C | 12. A |
| 13. A | 14. A | 15. A | 16. B |
| 17. B | | | |

3.

1. $7 + 12 \times [4 + 6] = 7 + 12 \times 10 = 7 + 120$
 $= 127$
2. $16 \div 4 - 2 = 4 - 2 = 2$
3. $25 - 3 \times 5 + 2 = 25 - 15 + 2 = 10 + 2$
 $= 12$
4. He walked = $[5 \times 7] \times 3 + 50$
 $= 35 \times 3 + 50 = 105 + 50$
 $= 155$ km

1

Cairo

1.

1. D 2. D 3. C
4. C 5. C 6. B
7. C 8. D 9. A

2.

1. Number of remaining minutes
= $1,200 - 700 = 500$ minutes

2. 30 4

5	$30 \times 5 = 150$	$4 \times 5 = 20$
---	---------------------	-------------------

$$5 \times 34 = 150 + 20 = 170$$

3. She walked = $14 \times 14 + 56$
= $196 + 56$
= 252 km

4. The order is: 37,123 , 23,125 , 20,137

5. Perimeter = $[6 + 4] \times 2 = 20$ cm
Area = $6 \times 4 = 24$ cm²

6. Factors of 40: 1, 2, 4, 5, 8, 10, 20, 40
Factors of 50: 1, 2, 5, 10, 25, 50
Common factors: 1, 2, 5, 10
G.C.F: 10

7. Number of all balloons = $7 \times 3 + 6$
= 27 balloons

2

Cairo

1.

1. A 2. C 3. C
4. D 5. C 6. A
7. C 8. C 9. C

2.

1. 10 : 05

2. X = 3

$$\text{The area} = 7 \times 3 = 21 \text{ cm}^2$$

3. • 1,050 • 154

4.

b	
53,500	76,500

$$b = 76,500 + 53,500 = 130,000$$

5. a. 1,050 milliliters

- b. 2, 3, 5

6. Factors of 12: 1, 2, 3, 4, 6, 12

$$\text{Factors of 20: } 1, 2, 4, 5, 10, 20$$

$$\text{Common factors: } 1, 2, 4$$

$$\text{G.C.F: } 4$$

7. a. 5,000,000,000

$$b. 2,045,000,250$$

3

Giza

1.

1. D 2. B 3. D
4. C 5. A 6. C
7. C 8. A 9. B

2.

$$1. 2 \times 5 \times 7 = [2 \times 5] \times 7 = 10 \times 7 = 70$$

$$2. \text{ The perimeter} = [8 + 2] \times 2 = 20 \text{ cm}$$

$$3. 6,122$$

$$4. 6,400$$

$$5. \text{ What she has now} = 6,234 + 2,345 \\ = 8,579 \text{ pounds}$$

6. Factors of 10: 1, 2, 5, 10

Factors of 15: 1, 3, 5, 15

Common factors: 1, 5

G.C.F: 5

7. The order is:

5 kg, 13 kg, 21,000 g, 24,000 g

4

Giza

1.

1. C 2. A 3. C

4. B 5. D

2.

1. C 2. A 3. B

4. A

3.

1. a. 15

b. The perimeter = $(7 + 3) \times 2 = 20$ cm.

2. a. 468

b. $(8 + 2) \div 2 = 10 \div 2 = 5$

3. a. 100

b. Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 10: 1, 2, 5, 10

Common factors: 1, 2

G.C.F: 2

c. The share of each one = $84 \div 6$
= 14 stickers

5

Alexandria

1.

1. C 2. A 3. B

4. A 5. C 6. B

7. D 8. B 9. C

2.

1. 978

2. $3 \times 4 \times 25 = 3 \times (4 \times 25) = 3 \times 100$
= 300

3. Factors of 21: 1, 3, 7, 21

Factors of 35: 1, 5, 7, 35

Common factors: 1, 7

G.C.F: 7

4. The number of books = $84 \div 6$
= 14 books

5. The total cost = $38 \times 30 = 1,140$ L.E.

6. 4,100

7. The area = $15 \times 6 = 90 \text{ m}^2$

6

El-Kalyoubia

1.

1. B 2. C 3. D

4. A 5. B 6. A

7. A 8. D 9. A

2.

1.

	10	4
5	$5 \times 10 = 50$	$5 \times 4 = 20$

$14 \times 5 = 50 + 20 = 70$

2. Equation : $x + 2,150 = 4,354$

Solution : $x = 4,354 - 2,150 = 2,204$

4,354	
X	2,150

3. 12

4. Factors of 16 : 1 , 2 , 4 , 8 , 16

Factors of 20 : 1 , 2 , 4 , 5 , 10 , 20

Common factors : 1 , 2 , 4

G.C.F : 4

5. $A = 4 \times 3$

6,360 mL	
6 L	360 mL

7. The area = $[5 \times 2] + [3 \times 3]$
 $= 10 + 9 = 19 \text{ m}^2$

7

El-Sharkia

1.

1. B 2. A 3. B

4. D 5. C 6. B

7. C 8. B 9. C

2.

10. $5 + 8 \div 2 = 5 + 4 = 9$

11. Factors of 20 : 1 , 2 , 4 , 5 , 10 , 20

Factors of 30 : 1 , 2 , 3 , 5 , 6 , 10 , 15 , 30

Common factors : 1 , 2 , 5 , 10

G.C.F : 10

12. The area = $4 \times 4 = 16 \text{ cm}^2$

13. 5,505

14. What she paid = $12 \times 9 = 108 \text{ L.E.}$

15. 484

16. 1,311

8

El-Monofia

1.

1. A 2. C 3. B

4. D 5. A 6. B

7. C 8. B 9. D

2.

1. The order is : 24,617 , 42,176 , 345,618 , 543,618

2. Factors of 10 : 1 , 2 , 5 , 10

Factors of 15 : 1 , 3 , 5 , 15

Common factors : 1 , 5

G.C.F : 5

3. The number of minutes = 8×60
 $= 480 \text{ minutes}$

4. The area = $8 \times 6 = 48 \text{ cm}^2$
 The perimeter = $[8 + 6] \times 2 = 28 \text{ cm.}$

5. 3,804

6. The number of ants = $142 + 164$
 $= 306 \text{ ants}$

7. 51

9

El-Gharbia

1.

1. B 2. A 3. D

4. D 5. C 6. C

7. A 8. A 9. B

2.

1. a. The number of ants = $172 + 128$
 $= 300 \text{ ants}$

b. $X = 683 - 245 = 438$

c. $2 \times 6 \times 5 = 2 \times 5 \times 6 = [2 \times 5] \times 6$
 $= 10 \times 6 = 60$

2. a. 75,000 milliliters

b. Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 18: 1, 2, 3, 6, 9, 18

Common factors: 1, 2, 3, 6

G.C.F: 6

3. a. [1] The perimeter = $4 \times 4 = 16$ cm

[2] The perimeter = $[2 + 5] \times 2$
 $= 14$ cm

b. [1] 940 [2] 85

10

El-Dakahlia

1.

a. 1. B 2. C 3. C

b. The number of pencils = $84 \div 4$
 $= 21$ pencils

2.

a. 1. B 2. A 3. A

b. What she paid = $7 \times 25 = 175$ L.E

3.

a. The area = $7 \times 7 = 49$ m²

b. 1. B 2. A 3. B

4.

a. $M = 2,450 + 1,630 = 4,080$

b. Factors of 18: 1, 2, 3, 6, 9, 18

Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24

Common factors: 1, 2, 3, 6

G.C.F: 6

5.

a. The number of figs = $3 \times 8 = 24$ figs

b. The remaining distance = $675 - 235$
 $= 440$ km.

11

Ismailia

1.

1. D 2. A 3. C

4. D 5. B 6. A

7. A 8. B 9. C

2.

10. The order is: 37,123, 23,125, 21,142, 20,137

11. The mass = 2 kg + 500 g
 $= 2\,000$ g + 500 g
 $= 2\,500$ g

12. $x = 500 - 150 = 350$

13. 2, 3

14. The area = $7 \times 3 = 21$ m²

15. The rest = $12 - 4 = 8$ pieces

The share of each friend = $8 \div 2$
 $= 4$ pieces

16. 30 "answer may vary"

12

Port Said

1.

1. D 2. A 3. C

4. C 5. A 6. C

7. B 8. D 9. D

2.

1.

500 10 2

$$3 \quad \begin{array}{|c|c|c|} \hline 500 \times 3 = 1,500 & 10 \times 3 = 30 & 2 \times 3 = 6 \\ \hline \end{array}$$

$$512 \times 3 = 1,500 + 30 + 6 = 1,536$$

2. 60

3. Factors of 4: 1, 2, 4

Factors of 12: 1, 2, 3, 4, 6, 12

Common factors: 1, 2, 4

G.C.F: 4

4. The perimeter = $(6 + 4) \times 2 = 20$ cm.

5. 36

6. The total = $8,250 + 5,980$

$$= 14,230 \text{ units}$$

7. The order: 20,137, 21,124, 23,125

13**Damietta**

1.

1. D 2. B 3. B

4. A 5. D 6. C

7. A 8. D 9. C

2.

1. 12,000 milliliters

2. The area = $5 \times 5 = 25 \text{ m}^2$

3. 736

3.

1. $y = 900 + 100 = 1,000$

2. Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 18: 1, 2, 3, 6, 9, 18

Common factors: 1, 2, 3, 6

G.C.F: 6

4.

$$\begin{aligned} 1. \quad 8 \times 2 + 8 - 3 &= 16 + 8 - 3 \\ &= 24 - 3 = 21 \end{aligned}$$

2. 157

14**Kafr El-Sheikh**

1.

1. D 2. C 3. C

4. A 5. C 6. A

7. B 8. A 9. B

2.

1. 6,000 2. 36,458

3. The perimeter = $(5 + 3) \times 2 = 16$ cm.4. $X = 2,567 + 2,538 = 5,105$

5. 1, 2, 5, 10

6. Factors of 4: 1, 2, 4

Factors of 6: 1, 2, 3, 6

Common factors: 1, 2

G.C.F: 2

7. What she paid = 5×500

$$= 2,500 \text{ pounds}$$

15**El-Beheira**

1.

1. A 2. D 3. A

4. B 5. A 6. C

7. A 8. A 9. B

2.

10. 7,000,000 11. 3,333,333

12. Factors of 6: 1, 2, 3, 6

Factors of 8: 1, 2, 4, 8

Common factors: 1, 2

G.C.F: 2

13. What he paid = $12 \times 8 = 96$ pounds

14. $(16 + 4) \div 2 = 20 \div 2 = 10$

15. The area = $6 \times 6 = 36 \text{ cm}^2$

16. The perimeter = $(8 + 2) \times 2 = 20 \text{ cm}$.

16 El-Fayoum

1.

1. D 2. A 3. B

4. D 5. B 6. D

7. B 8. A 9. C

2.

1. Factors of 6: 1, 2, 3, 6

Factors of 8: 1, 2, 4, 8

Common factors: 1, 2

G.C.F: 2

2. What she will save = $44 \times 3 = 132 \text{ L.E}$

3. 123 4. 305

5. The order is: 7,234,345, 8,029,234, 8,092,561, 9,345,355

6. 3,835,011,094

7. The area = $6 \times 6 = 36 \text{ cm}^2$

17 El-Menia

1.

1. B 2. C 3. C

4. B 5. C 6. A

7. A 8. A 9. B

2.

1. Factors of 8: 1, 2, 4, 8

Factors of 12: 1, 2, 3, 4, 6, 12

Common factors: 1, 2, 4

G.C.F: 4

2. 7,629

3. 10, 15, 20 "Answer may vary"

4. The order is: $25,682 < 26,450 < 364,000$

5. The perimeter = $5 \times 4 = 20 \text{ m}$.

6. Anas paid = $250 + 190 = 440 \text{ L.E}$.

7. The total = $75 \times 9 = 675 \text{ seats}$

18 Qena

1.

1. C 2. B 3. C

4. B 5. C 6. A

7. B 8. B 9. C

2.

1. Factors of 12: 1, 2, 3, 4, 6, 12

Factors of 18: 1, 2, 3, 6, 9, 18

Common factors: 1, 2, 3, 6

G.C.F: 6

2. The perimeter = $(5 + 4) \times 2 = 18 \text{ cm}$.

The area = $5 \times 4 = 20 \text{ cm}^2$

3. $75 \times 3 = 210 + 15 = 225$

4. 80

5. $b = 3,000 + 1,000 = 4,000$

6. What he paid = $7,250 + 4,000 = 11,250 \text{ L.E}$.

7. What he paid = $87 \times 4 = 348 \text{ pounds}$.

19**Aswan****1.**

- | | | |
|------|------|------|
| 1. C | 2. D | 3. B |
| 4. A | 5. C | 6. B |
| 7. D | 8. B | 9. A |

2.

1. $n = 15 + 30 = 45$

2. 0, 6, 12, 18, 24, 30

3. The price = $4 \times 10 = 40$ pounds

4. Factors of 10: 1, 2, 5, 10

Factors of 15: 1, 3, 5, 15

Common factors: 1, 5

G.C.F: 5

5. 2,112 6. 41

7. The perimeter = $5 + 3 + 3 + 2 + 2 + 5$
= 20 cm.

n	
15	30

20**South Sinai****1.**

- | | | |
|------|------|------|
| 1. B | 2. A | 3. D |
| 4. C | 5. C | 6. A |
| 7. C | 8. C | 9. A |

2.

1. The remainder = $825 - 317$
= 508 pounds

2. The area = $6 \times 6 = 36 \text{ cm}^2$

3. $45 \div 9 + 5 = 5 + 5 = 10$

4. Factors of 14: 1, 2, 7, 14

Factors of 7: 1, 7

Common factors: 1, 7

G.C.F: 7

5. The perimeter = $[8 + 7] \times 2 = 30 \text{ cm}$.

6. 2,400

7. The number of students
= $2,154 + 3,456 = 5,610$ students